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SCIENCE FICTION

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IALF PAST HUMAN

. J. Bass

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N THIS ISSUE!

AMBOREE

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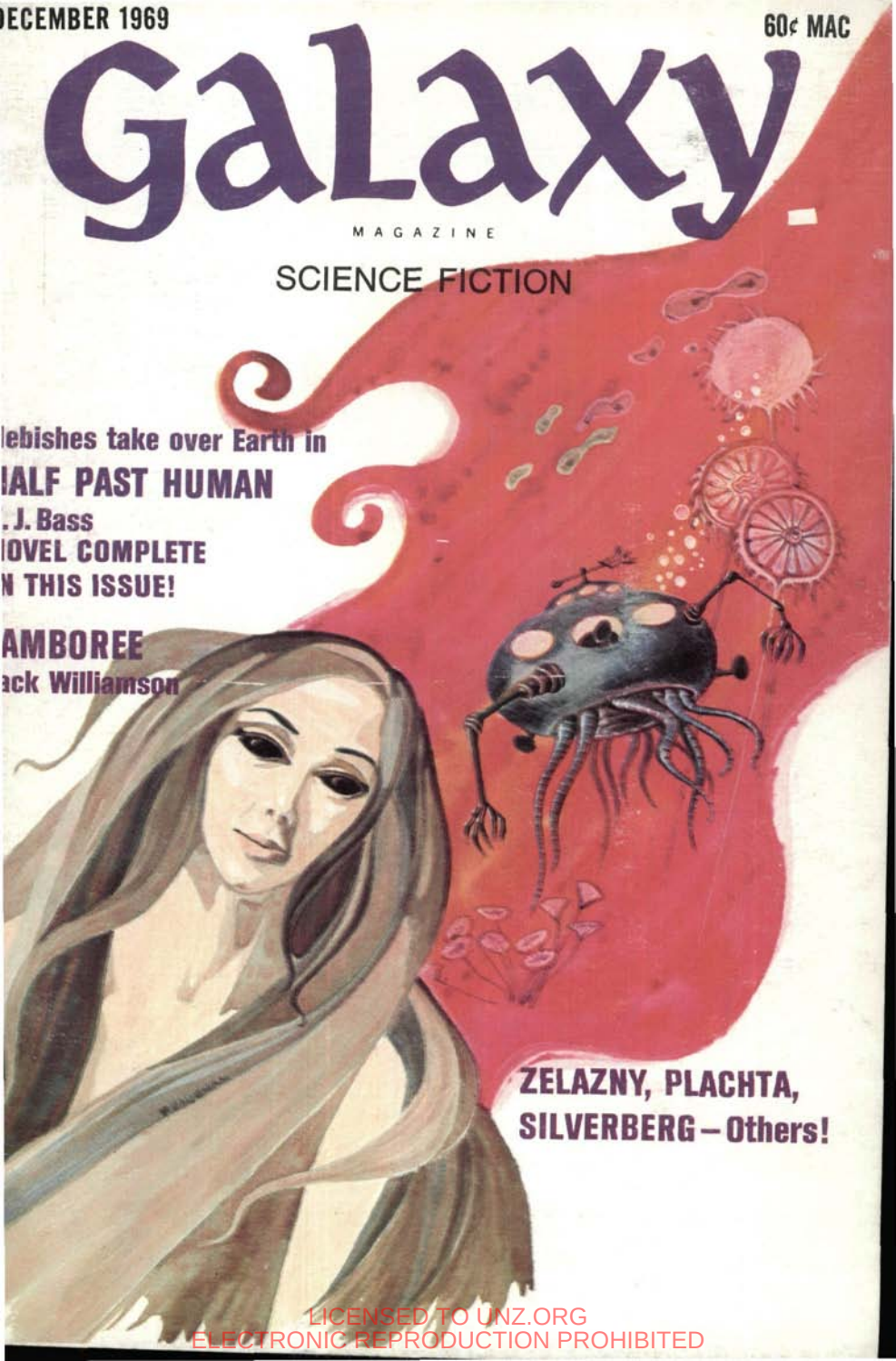

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MAGAZINE

ALL STORIES NEW

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SUNPOT

The word looks like something you might have seen before. So does the phenomenon it describes. Turn to page 142 for its first expression. Kick it around but don't jump to conclusions.

Hit the student road. Ethnology can and should be as precise as any of the physical sciences says Claude Lévi-Strauss, anthropologist and founder and leading exponent of Structuralism—and I believe. You can't begin to imagine how hard I believe. The only valid distinction between societies, again says Claude Lévi-Strauss, is that some have a written language and hence a history and others don't. And there, in a nutshell, you have all the campus riots.

Today we study the New People—the young have always belonged to their own ethnic. Today's young adults in addition have their own distinctive language—verbal and hieroglyphic—and they're rapidly writing history.

Vaughn Bodé, who also looks (see top right) like something you might have seen before—but don't bet that you have—says, "The monolithic awareness of youth stirs and rises up greatly and powerfully. I am awash on a new shore and I am at home with the New People. My acceptance is running like a fast tide . . . I want to do many things with my life but mostly I want to share the places deep in my head with readers everywhere."

Sunpot, a new illustrated feature created and produced entirely by Vaughn Bodé, will appear exclusively and monthly in *Galaxy Magazine* beginning with the January, 1970 issue. Vaughn, a licensed small-plane pilot and parachutist, young father, Underground artist and commercial art director, window washer and this year's Hugo winner, will communicate in *Sunpot* in the picture-writing language of the young adults of today. He rules his own galaxy of "little worlds . . . I use them to reflect the harsh realities that all of us must march."

Vaughn will do his thing. Not I nor anyone else on the staff of this magazine will control what it is. I will comment on it on these pages if I have to—you may comment on it wherever you like.

We're going to be seeing the unpredictable—perhaps even by Vaughn Bodé. It is possible that not even Bodé has seen all of Bodé before. —JAKOBSSON

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These great minds were Rosicrucians . . .

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JAMBOREE

Pop glared and Mother was all steamed up about the adults who would not be!

JACK WILLIAMSON

THE scoutmaster slipped into the camp on black plastic tracks. Its slick yellow hood shone in the cold early light like the shell of a bug. It paused in the door, listening for boys not asleep. Then its glaring eyes began to swivel, darting red beams into every corner, looking for boys out of bed.

"Rise and smile!" Its merry voice bounced off the gray iron walls. "Fox Troop rise and smile! Hop for old Pop! Mother says today is Jamboree!"

The Nuke Patrol, next to the door, was mostly tenderfeet, still in their autonomic prams. They all began squalling. They had not yet learned to love old Pop. The machine's happy voice rose louder than their howling. It came fast down the narrow aisle to the cubs in the Anthrax Patrol.

"Hop for Pop. Mother says it's Jamboree."

The cubs jumped to attention, squealing with delight. Jamboree was bright gold stars to paste on their faces. Jamboree was a whole scoop of pink ice milk and maybe a natural apple. Jamboree was a visit to Mother's.

The older scouts in the Scavenger Patrol and the Skull Patrol were not so noisy. They knew Mother would not have many more Jamborees for them. At the far end of the camp three boys sat up without a sound and looked at

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Joey's empty pallet wonderingly.

"Joey's late," Ratbait whispered. He was a pale, scrawny, wise-eyed scout who looked too old for twelve. "We oughta save his hide. We oughta fix a dummy and fool old Pop."

"Naw," muttered Butch. "He'll get us all in bad."

"But we oughta—" Blinkie wheezed. "We oughta help—"

Ratbait began to wad up a pillow to be the dummy's head. He dropped flat when they saw the scoutmaster rushing down with a noise like wind, red lamps stabbing at the empty bed.

"Now, now, scouts—" Its voice fluttered like a hurt bird. "You can't play pranks on poor old Pop. Not today. You'll make us late for Jamboree."

Ratbait felt a steel whip twitch the blanket from over his head and saw red light burning through his tightly shut lids.

"Better wake up, Scout R-eight." The smooth, sad voice dripped over him like warm oil. "Better tell old Pop where J-O went."

Ratbait squirmed under that terrible blaze. He was unable to see, unable to breathe and he could think nothing to say. He gulped at the taste of terror in his throat and tried to shake his head. At last the red glare went on to Blinkie.

"Scout Q-Two, you're a twenty-badger." The low, slow voice licked at Blinkie like a friendly pup. "You like to help old Pop keep a tidy camp for Mother. You'll tell us where J-O went."

Blinkie was a fattish boy. His puffy face was toadstool-pale and his pallet had a sour smell from being wet. He sat up and ducked back from the steel whip over him.

"Please d-d-d-d-d—"

A wheezy stammer stalled his voice and he failed to dodge the bright whip that looped around him and dragged him up to the heat and the hum and the hot oil smell of Pop's yellow hood.

"Well, Scout Q-Two?"

Blinkie gasped and stuttered and finally sagged against the plastic tracks like gray jelly. The shining coils rippled around him like thin snakes, constricting. His breath wheezed out and his fat arm jerked up, pointing at a black sign on the wall:

DANGER!
POWER ACCESS
ROBOTS ONLY!

The whips tossed him back on his sour pallet. He lay panting and blinking and dodging even after the whips were gone. The scoutmaster's eyes flashed to the sign and the square grating under it, swiveled back to Butch.

Butch was a slow, stocky, bug-eyed boy, young enough to come back from another Jamboree. He

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had always been afraid of Pop but he wanted to be the new leader of Skull Patrol in Joey's place and now he thought he saw his chance.

"Don't hit me, Pop!" His voice squeaked and his face turned red. He scrambled off his pallet without waiting for the whips. "I'll tell on Joey. I been wantin' all along to tell but I was afraid they'd beat me."

"Good boy." The scoutmaster's loud words swelled out like big soap-bubbles bursting in the sun. "Mother wants to know all about Scout J-O."

"He pries that grating—" Butch's voice quavered and caught when he saw the look on Ratbait's face but when he turned to Pop it came back fast. "Does it every night. Since three Jamborees ago. Sneaks down into the pits where the robots work. I dunno why, except he sees somebody there. And brings things back. Things he shouldn't have. Things like this."

He fumbled in his uniform and held up a metal tag.

"This is your good turn today, Scout X-six." The thin tip of a whip took the tag and dangled it "Whose tag is this?"

Butch's voice dried up when he saw Ratbait's pale lips making words without a sound.

"What's so much about an ID tag?" Ratbait asked. "Anyhow, what were you doing in Joey's bed."

"It's funny." Butch looked away and squeaked at Pop. "A girl's number."

THE silent shock of that bounced off the iron walls, was somehow louder than old Pop's boom. Most of the scouts had never seen a girl. After a long time the cubs near the door began to whisper and titter.

"Shhhhh!" Pop roared like steam. "Now we can all do a good turn for Mother. And play a little joke on Scout J-O! He didn't know today would be Jamboree but he'll find out." Pop laughed like a heavy chain clanking. "Back to bed! Quiet as robots!"

Pop rolled close to the wall near the power-pit grating and the boys lay back on their pallets. Once Ratbait caught his breath to yell but he saw Butch's bug-eyes watching. Pop's hum sank, and even the tenderfeet in their prams were quiet.

Ratbait heard the grating creak. He saw Joey's head, tangled yellow hair streaked with oil and dust. He frowned and shook his head and saw Joey's sky-blue eyes go wide.

Joey tried to duck but the quick whips caught his neck. They dragged him out of the square black pit and swung him like a puppet toward old Pop's eyes.

"Well, Scout J-O!" Pop laughed like thick oil bubbling. "Mother wants to know where you've been."

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Joey fell on his face when the whip uncoiled but he scrambled to his feet. He gave Ratbait a pale grin before he looked up at Pop but he didn't say anything.

"Better tell old Pop the truth." The slick whips drew back like lean snakes about to strike. "Or else we'll have to punish you, Scout J-O."

Joey shook his head and the whips went to work. Still he didn't speak. He didn't even scream. But something fell out of his torn uniform. The whip-tips snatched it from the floor.

"*What's this thing, Scout J-O?*" The whip-fingers turned it delicately under the furious eyes and nearly dropped it again. "Scout J-O, this is a book."

Silence echoed in the iron camp.

"Scout J-O, you've stolen a book." Pop's shocked voice changed into a toneless buzz, reading the title. *"Operators' Handbook, Nuclear Reactor, Series 9-Z."*

Quiet sparks of fear crackled through the camp. Two or three tenderfeet began sobbing in their prams. When they were quiet old Pop made an ominous, throat-clearing sound.

"Scout J-O, what are you doing with a book?"

Joey gulped and bit his underlip till blood seeped down his chin but he made no sound. Old Pop rolled closer, while the busy whips were stowing the book into a dark compartment under the yellow hood.

"Mother won't like this." Each word clinked hard, like iron on iron. "Books aren't for boys. Books are for robots only. Don't you know that?"

Joey stood still.

"This hurts me, Scout J-O." Pop's voice turned downy soft, the slow words like tears of sadness now. "It hurts your poor Mother. More than anything can ever hurt you."

The whips cracked and cracked and cracked. At last they picked him up and shook him and dropped him like a red-streaked rag on the floor. Old Pop backed away and wheeled around.

"Fox Troop rise and smile!" Its roaring voice turned jolly again, as if it had forgotten Joey. "Hop for Pop. Today is Jamboree and we're on our way to visit Mother. Fall out in marching order."

The cubs twittered with excitement until their leaders threatened to keep them home from Jamboree but at last old Pop led the troop out of camp and down the paved trail toward Mother's. Joey limped from the whips but he set his teeth and kept his place at the head of his patrol.

Marching through boy territory, they passed the scattered camps of troops whose Jamborees

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came on other days. A few scouts were out with their masters but nobody waved or even looked straight at them.

The spring sun was hot and Pop's pace was too fast for the cubs. Some of them began to whimper and fall out of line. Pop rumbled back to warn them that Mother would give no gold stars if they were late for Jamboree.

When Pop was gone Joey glanced at Ratbait and beckoned with his head.

"I gotta get away," he whispered low and fast. "I gotta get back to the pits—"

Butch ran out of his place, leaning to listen. Ratbait shoved him off the trail.

"You gotta help," Joey gasped. "There's a thing we gotta do—an' we gotta do it now. This will be the last Jamboree for most of us. We'll never get another chance."

Butch came panting along the edge of the trail, trying to hear. Blinkie got in his way.

"What's all this?" Ratbait breathed. "What you gonna do?"

"It's all in the book," Joey said. "Something called manual override. There's a dusty room—down under Mother's—back of a people-only sign. Two red buttons. Two big levers. With a glass wall between. It takes two people."

"Who?" Joey gulped. "One of us?"

Joey shook his head, waiting for Blinkie to elbow Butch.

"I got a friend. We been working together down in the pits. Watching the robots. Reading the books. Learning what we gotta do—"

He glanced back. Blinkie was scuffling with Butch to keep him busy but now the scoutmaster came clattering back from the rear, booming merrily, "Hop for Pop! Hop a lot for Pop!"

"How you gonna work it?" Alarm took Ratbait's breath. "Now the robots will be watching—"

"We got a back door." Joey's whisper raced. "A drainage tunnel. Hot water out of the reactor. Comes out under Black Creek bridge. My friend will be there. If I can dive off this end of the bridge—"

"Hey, Pop!" Butch was screaming. "Ratbait's talking! Blinkie pushed me! Joey's planning something bad!"

"Good boy, Scout X-six!" Pop slowed beside him. "Mother wants to know if they're plotting more mischief."

WHEN Pop rolled on ahead of the troop, Ratbait wondered what would happen when Joey and his friend pushed the two red buttons and pulled the two big levers but Butch stuck so close they could not speak again. He thought it must be something about the reactor. Power was the life of Mother and the robots. If Joey could cut off the power—

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would they die? All of them?

The idea frightened him. Who would care for the tenderfeet if the prams stopped? Who would make chow? Who would tell anybody what to do? Perhaps the books would help, he thought. Maybe Joey and his friend would know.

With Pop rolling fast in the lead, they climbed a long hill and came in sight of Mother's. Old gray walls that had no windows. Two tall stacks on dun brick. A shimmer of heat in the pale sky.

The trail sloped down. Ratbait saw the crinkled ribbon of green brush along Black Creek and then the concrete bridge. He watched Butch watching Joey and listened to Blinkie panting and tried to think of how to help.

The cubs stopped whimpering when they saw Mother's mysterious walls and stacks. The troop marched fast down the hill. Ratbait slogged along, staring at the yellow sun-dazzle on old Pop's hood. He could think of nothing to do.

"I got it," Blinkie was breathing, close to his ear. "I'll take care of Pop."

"You?" Ratbait scowled. "You were telling on Joey—"

"That's why," Blinkie gasped. "I wanta make it up. I'll handle Pop. You stop Butch—an' give the sign to Joey."

They came to the bridge and Pop started across.

"Wait, Pop." Blinkie darted out of line, toward the brushy slope above the trail. "I saw a girl. Hiding in the bushes to watch us go by."

Pop roared back off the bridge.

"A girl in boy territory!" Its shocked voice splashed them like cold rain. "What would Mother say?"

Black tracks spurting gravel, it lurched past Blinkie and crashed into the brush.

"Listen, Pop!" Butch started after it, waving and squealing. "They ain't no girl—"

Ratbait tripped him and turned to give Joey the sign but Joey was already gone. Something splashed under the bridge and Ratbait saw a yellow head vanishing under the stream that drifted out of a black tunnel.

"Pop—Pop—" Butch rubbed gravel out of his mouth and danced on the pavement. "Come back, Pop. Joey's in the creek. Ratbait and Blinkie—they helped him get away."

The scoutmaster swung back down the slope, empty whips waving. It skidded across the trail and down the bank to the hot creek. Its yellow hood disappeared in the steam.

Blinkie clenched his fat fists.

"You told on Joey, Butch."

"An' you'll catch it." Murky eyes bugging, Butch edged away. "You just wait till Pop gets back."

They waited. The tired cubs sat

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down to rest and the tenderfeet fretted in their hot prams. Breathing hard, Blinkie kept close to Butch. Ratbait watched till Pop swam back out of the drain.

The whips were wrapped around two small bundles that dripped pink water. Unwinding, the whips dropped Joey and his friend on the trail. They crumpled down like rag dolls but the whips set them up again.

"How's this, scouts?" Old Pop laughed like steel gears clashing. "We've caught ourselves a real live girl."

In a bird-quick way she shook the water out of her sand-colored hair. Standing straight, without the whips to hold her, she faced Pop's glaring lamps. She looked tall for twelve.

Joey was sick when the whips let him go. He leaned off the bridge to heave and limped back to the girl. She wiped his face with her wet hair. They caught hands and smiled at each other as if they were all alone.

"They tripped me, Pop." Braver now, Butch thumbed his nose at Blinkie and ran toward the machine. "They tried to stop my telling you—"

"Leave them to Mother." Pop bugled a song of joy. "Let them try their silly tricks on her." It wheeled toward the bridge. The whips pushed Joey and the girl ahead of the crunching tracks. "Now hop with Pop to Jambo-

Ballantine Books

IT'S THAT TIME again. We have enough trouble conjuring up Christmas spirit in December—let alone in June when this column is being written. The whole bit is bizarre. Still, we'll remind you that we have boxed sets of Mervyn Peak's GORMENGHAST trilogy and of Tolkien's LORD OF THE RINGS. And any number of other mad, merry and beautiful books to choose from. Do it now.

•

AND READY for Christmas, a rich anthology of topflight science fiction edited by Robert Silverberg and titled DARK STARS—95¢. Also, for your own delectation we hope you have UP THE LINE by our favorite Pope.

•

DECEMBER is shy on offbeat stuff (are we subconsciously subscribing to the traditional?)but for occultists we have Elizabeth Byrd's weird experiences in New York and Scotland, titled A STRANGE AND SEEING TIME—95¢. We spent some time in at least one of the castles she mentions

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and can testify to the authenticity of her experiences. We've never been back. Come to think of it, even this book is traditional because Christmas (our old-fashioned Christmas anyway) is a time when one sits around a fire telling spooky stories. So a Merry Yule to You All.

•

IN THIS month, too, the third novel in the series that started with THE REEFS OF SPACE and STARCHILD—title, ROGUE STAR, by Frederik Pohl and Jack Williamson—75¢.

•

OUR ADULT fantasy series continues with THE SORCEROR'S SHIP, by Hannes Bok, introduction by Lin Carter. This is one in the grand tradition, with wizards, sea monsters and the like. First time in book form here—95¢

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Ballantine Books

ree! Hop with Pop! Hop, hop!"

THEY climbed that last hill to a tall iron door in Mother's old gray wall. The floors beyond were naked steel, alive with machinery underneath. They filed into a dim, round room that echoed to the grating squeal of Pop's hard tracks.

"Fox Troop, here we are for Jamboree!" Pop's jolly voice made a hollow booming on the curved steel wall, which reflected Pop's red light. "Mother wants you to know why we celebrate this happy time each year."

The machine was rolling as it spoke to the center of a wide black circle in the middle of the floor. Something drummed far below like a monster heart and Ratbait saw that the circle was the top of a black steel piston. It slid slowly up, lifting Pop. The drumming died and Pop's eyes blazed down on the cubs in the Anthrax Patrol, to stop their awed murmuring.

"Once there wasn't any Mother." The shock of that crashed and throbbed and faded. "There wasn't any yearly Jamboree. There wasn't even any Pop, to love and care for little boys."

The cubs were afraid to whisper but a stir of troubled wonder spread among them.

"You won't believe how tenderfeet were made." There was a breathless hush. "In those bad old days, boys and girls were al-

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lowed to change like queer insects. They changed into creatures called adults—"

The whips writhed and the red lamps glared and the black cleats creaked on the steel platform.

"Adults!" Pop spewed the word. "They malfunctioned and wore out and ran down. Their defective logic circuits programed them to damage one another. In a kind of strange group malfunction called war they systematically destroyed one another. But their worst malfunction was in making new tenderfeet."

Pop turned slowly on the high platform, sweeping the silent troop with blood-red beams that stopped on Joey and his girl. All the scouts but Ratbait and Blinkie had edged away from them. Her face white and desperate, she was whispering in Joey's ear. Listening with his arm around her, he scowled up at Pop.

"Once adults made tenderfeet, strange as that may seem to you. They used a weird natural process we won't go into. It finally broke down because they had damaged their genes in war. The last adults couldn't make new boys and girls at all."

The red beams darted to freeze a startled cub.

"Fox Troop, that's why we have Mother. Her job is to collect undamaged genes and build them into whole cells with which she can assemble whole boys and girls. She has been doing that a long time now and she does it better than those adults ever did. And that's why we have Jamboree! To fill the world with well-made boys and girls like you and to keep you happy in the best time of life—even those old adults always said childhood was the happy time. Scouts, clap for Jamboree!"

The cubs clapped, the echo like a spatter of hail on the high iron ceiling.

"Now, scouts, those bad old days are gone forever," Pop burbled merrily. "Mother has a cozy place for each one of you and old Pop watches over you, and you'll never be adult—"

"Pop! Pop!" Butch squealed. "Lookit Joey an' his girl—"

POP spun around on the high platform. Its blinding beams picked up Joey and the girl sprinting toward a bright sky-slice where the door had opened for the last of the prams.

"Wake up, guys!" Joey's scream shivered against the red steel wall. "That's all wrong. Mother's just a runaway machine. Pop's a crazy robot—"

"Stop for Pop!" The scoutmaster was trapped on top of that huge piston but its blazing lamps raced after Joey and the girl. "Catch 'em, cubs! Hold 'em tight. Or there'll be no Jamboree!"

"I told you, Pop!" Butch scuttled after Joey. "Don't forget I'm

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the one that told. I'm the one—"

Ratbait dived at his heels. They skidded together on the floor.

"Come on, scouts!" Joey was shouting. "Run away with us. Our own genes are good enough."

The floor shuddered under him and that bright sky-slice grew thinner. Lurching on their little tracks, the prams formed a line to guard it. Joey jumped the shrieking tenderfeet but the girl stumbled. He stopped to pick her up.

"Help us, scouts," he gasped. "We gotta get away—"

"Catch 'em for Pop!" that metal bellow belted them. "Or there'll be no gold stars for anybody!"

Screeching cubs swarmed around them. The door clanged shut. Pop plunged off the sinking piston almost too soon. The yellow hood crunched. Hot oil splashed and smoked but the whips hauled Pop upright again.

"Don't mess around with M-M-M-M-Mother!" The anvil voice came back with a stuttering croak. "She knows best!"

The quivering whips dragged Joey and the girl away from the clutching cubs and pushed them into a shallow pit where that great black piston had dropped below the level of the floor.

"Now sing for your Mother!" old Pop chortled. "Sing for the Jamboree!"

The cubs howled out their official song and the Jamboree went on. There were Pop-shaped balloons for the tenderfeet, and double scoops of pink ice milk for the cubs and gold stars for nearly everybody.

"But Mother wants a few of you," old Pop purred.

A pointing whip picked out Blinkie. He jumped into the pit without waiting to be dragged. But Butch turned white and tried to run when it struck at him.

"Pop! Not m-m-m-m-me!" he squeaked. "Don't forget I told on Joey. I'm only going on eleven and I'm in line for leader and I'll tell on everybody—"

"That's why Mother wants you." Old Pop laughed like a pneumatic hammer. "You're getting too adult."

The whip snaked Butch into the pit, dull eyes bulging more than ever. He slumped down on the slick black piston and struggled like a squashed bug and then lay moaning in a puddle of terror.

Ratbait stood sweating as the whip came back to him. His stomach felt cold and strange and the tall red wall spun like a crazy wheel around him. He couldn't move. The whip pulled him to the rim of the pit.

There Blinkie took his hand. Ratbait shook off the whip and stepped down into the pit. Joey nodded and the girl gave him a white, tiny smile. They all closed around her, arms linked tight, as the piston dropped.

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"Now hop along for Pop! You've had your Jamboree—"

That hooting voice died away far above and the pit's round mouth shrank into a blood-colored moon. The hot dark drummed like thunder all around them and the slick floor tilted. It spilled them all into Mother's red steel jaws. ✦

GALAXY'S STARS

"My writing career started in Viet Nam, when a general asked me to prepare a report on the causes of malaria," says T.J. Bass, a young pathologist from southern California, whose *Half Past Human* is this month's featured novel. "The report had to be written in non-technical language for laymen, and when I finished the whole thing sounded so much like science fiction, I decided to try my hand at that. After all, I'd been reading sf for years."

Bass' first story, *Star Itch*, appeared in the September, 1968, issue of our companion magazine as an IF First, and he has been writing ever since. He extrapolates much of his material from his readings in current medical journals. When the Giant Toothpick in *Half Past Human* treats cancer patients with heat, he adopts a current, though extremely high-risk, procedure. Even his ratio of one-third cured to two-thirds dead reflects the success-failure ratio today.

"The Giant Toothpick," says Bass, "began as a comic book for my kids. It is based on a 39-inch hardwood tomato stake that I carry when I run cross country (Bass, a marathon runner, has his A.A.U. card) as protection against dogs. I painted eyes on my toothpick and the kids treat it like one of their dolls."

Bass does much of the research for his stories on the hoof, using his co-runners as sounding boards and information banks. His "hardware consultant" is the man who literally put the legs on the moon module of Apollo 11; his "electronic consultant" has designed a thermometer scheduled to be inserted in the moon to find out just how hot/cold our satellite is; and his "software consultant" conducts a computer school for digital computer operators.

Bass and wife Gloria are raising five youngsters: Sara, Tom, Joan, Mary Pat and Karl (9, 7, 5, 3 and 1). The youngest is named for the Komputerized Aerospace Research Laboratory—an acronym from a soon-to-be-published story. Also in the Bass menage is goat Gertrude, a third-generation star milker. Her herd name is Stratford-belle, all the goats in the herd being named for Shakespearian characters.

Does Bass envision a hive culture on planet Earth? "I like to think we have more than a few decades prehive time—hopefully there may be 50,000 years of five-toed time. But the hive seems to be evolving all around us. I just hope that mankind has a good foothold on several star systems before the hive culture stagnates this planet."

✦✦✦✦

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A Novel Complete In This Issue

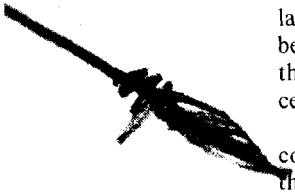
T. J. BASS

The Nebishes had taken over Earth and Man faced a life so perfect that he had nothing to die for!

HALF PAST HUMAN

I

IN THE Year of Olga, twenty-three forty-nine, Dan and Moon returned to Rocky Top Mountain. Edentulous and withered with years, they sought the shelter above the ten-thousand-foot level where the Big ES couldn't reach. In this, the third millennium, Earth was avocado and peaceful. Avocado, because all land photosynthesized; and peaceful, because mankind was evolving into the four-toed Nebish—the complacent hive citizen.



Dan and Moon had no time for complacency. Hunted and starving, they struggled for survival in an ecology where the food chain had been

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shortened to its extreme. Earth Society had squeezed its citizens between the plankton ponds and the sewers, until there were no niches for the in-between people except with the varmints and vermin—thieving from garbage and gardens.

The hive culture flourished underground. Three trillion Nebishes shared in Earth's bounty and found happiness in the simple, stereotyped rewards rationed out by Earth Society—the Big ES. Nothing moved on the surface except the Agrimechs and a rare fugitive such as Moon. He was a five-toed throwback unable to adjust to the crowded society. Both he and his dog, Dan, were living fossils. Their species were crowded out by the Nebish masses, but they lived on. Both had been subjects in ancient experiments on the metabolic clock—rendering them clockless; so their bodies lingered through the generations enabling them to witness, in agony, the extinction of their kind. The extinction was still going on, for an occasional throwback still appeared in the Nebish stock—primitives left behind by evolution.

Faithful, dull-witted Agrimechs labored in the avocado-colored vegetation, striving to catch every quantum of the sun's energy and transform it into the needed carbohydrates. Their mechanical intelligences were suited to their tasks—they were dedicated, reliable. On this day in 2349 A.O. a new mech brain stirred on Rocky Top Mountain. Its circuitry was far more complex—it was quick-witted and faithful to no one and nothing but itself.

"Hi ho! Old man with dog. Pick me up."

"Who speaks?" asked Moon, picking up a rock.

Dan's snout wrinkled in a toothless snarl.

"I am down here, under these leaves."

"The spirit of the spear?"

"No—I'm a machine. Toothpick is my name."

Moon and Dan crouched a respectable distance away.

"You are no machine I know. Machines can move."

"I am a small one—to be carried. Pick me up."

Moon hesitated.

"But the metal detectors—"

"Don't worry. I'm not iron," coaxed Toothpick. "Pick me up. I can feed you."

Moon and Dan were always a little hungry.

"Edibles are welcome. Feed us and we'll talk some more."

Toothpick instructed him to return to the valley.

SENSES alert, they crouched on the edge of the orchard. Harvesters rolled by on wide soft wheels like giant beetles, appendages folded and thorax-like bins laden with plankton powder, fruits and vegetables. The evening sun hid intermittently behind dark clouds on the western horizon. Moon waited for an agromech carrying wooden tomatoes. Shouting, he waved at the bulge of sensors—the "head" that housed communicator and neurocircuitry at its anterior end. The huge machine stopped. Moon gave its wheel a friendly pat.

"Good afternoon, human."

"Need any repairs?"

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"Just a loose dust cover on my L box—but it can keep until we can get—"

"I'll take a look at it," Moon said, going to the tool kit. While he worked on the load leveler he asked casually, "Anyone asking for me these days?"

"No," answered the bulky Harvester.

"Are you going to report seeing me?"

"I haven't been ordered to. I only report what I am ordered to report."

"I know."

Moon patted the machine affectionately. He knew it must report him if he stole part of the harvest. It would never hurt him or try to interfere but it had to report any damage or loss.

"Mind if I ride along?" he asked.

"I'd enjoy your company," said the machine as it started to move slowly.

Dan perked up his ears and began to pad along behind. Soon, as Toothpick had predicted, fierce thunder sounded and lightning flashed. Moon packed his sack with wooden tomatoes and strapped it on his back. The machine stopped to let him off. It would report him as soon as the storm lifted —but by then it would be morning if Toothpick proved right.

THE banana sun was well up in the grape sky when Moon returned to the spot where Toothpick protruded from the dusty humus. Below, on the flat land, the thunderstorm was beginning to dissipate.

"You are a god," said Moon as he sorted through glistening ten-inch spheres.

"Hardly."

Moon talked while he cracked open one of the tomato-colored fruits and began to gum the moist pulp.

"You brought the rains and you kept Harvester from reporting me."

The cyber spoke carefully, didactically: "I predicted the rain and the electrical activity kept the Harvester from reporting. My abilities are based on science, not sorcery." For a moment the cyber focused its optic pickup on the old man and the dog as they struggled with the nutritious pulp in toothless mouths. It continued: "Of course you could represent my powers as spiritual to any of your fellows. You could organize a following—establish a religion—"

Face screwed up in disgust, the old man answered, "Never. Cooperation is what the Big ES is made of—organize, cooperate and crush the individual. Man was meant to be wild and free."

Toothpick flexed his surface membrane charge and squirmed in the chocolate vegetable debris.

"Pick me up."

Moon and Dan were still a bit chary about letting a talking javelin into their tight partnership.

"Why?"

"I am a companion robot—designed to offer companionship in exchange for companionship."

"Dan and I are sufficient. What do we need with you? You can't even walk. You'd be a burden."

"Both of you need teeth. Pick me up and I'll help you find teeth," said the cyber.

Moon flicked his tongue over the stumps of tender dentine that were almost covered by hypertrophic gum

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tissue. Two hundred years of chewing had worn them away. The subsequent softening of his diet had softened his body, too. To bite and chew again—he could not finish the thought. He picked up the hundred-centimeter javelin and the three of them left Rocky Top.

BALL, a metalloid sphere, occupied a rocky cairn in the center of a tattered neolithic village. A place of reverence, the cairn was surrounded by meager food offerings. The Ball protected them—the villagers of Table Mountain—until their numbers had grown into the hundreds. Dawn brought them out of their sewn-hide shelters with flint tools, clay bowls and ripe grain—work, work.

All activity stopped when the flap of the large shelter moved. Eyes focused on the flap. A bald male stepped out. Hunched with age, he was dressed in flowing skins which had been stained with metachromatic berry juices. Walking quickly to the cairn, he placed both hands on the sphere, which resembled his own head in size and baldness. For a pensive moment the villagers studied their seer's brooding face as he attempted to contact their unseen protective deities.

Alarm appeared on the aged face. Immediately the village broke up into families and small social units. Shelters came down and burins, scrapers and truncated flakes were wrapped with grain and dried meats. The bundles, folded in hides, were strapped on adult backs and weapons appeared in calloused hands. Moments later the village was deserted—only dust and debris now remained.

Across that dust walked a pubescent female leaving clear, measured five-toed footprints. She walked alone down a narrow trail. She was bait. Six sullen males, each carrying a heavy spear, watched her leave. Then they crouched into the dark crevices along the girl's trail.

Silence returned to Table Mountain. The sun climbed higher. A male child—puberty minus five—became lost during the flight and wandered into the open. He never even heard the hum of the approaching arrow.

The nattily clad, fat, pale bowman approached the flopping jungle bunny. With a heavy foot he steadied the small ribcage while he ripped out the barbed tip of the hunting arrow. He unsheathed the short curved blade of his trophy knife and bent over the twitching form. Mercifully falling blood pressure clouded the victim's consciousness. The grisly trophy bagged, the Hunter renocked his arrow and moved up the trail. Finding the village deserted, he followed the five-toed footprints down another slope.

This was his third day without sleep—the small console on his neck titrated his blood level of Speed. His buckeye detector saw nothing through the towering boulders. He paused cautiously. The six spear chuckers shifted impatiently in their hiding places. A flash of movement at the bottom of the trail—the bait showed herself. Another trophy. The Hunter started down the trail at a reckless trot.

The spears flew. The throwers rushed out.

The circuits of the buckeye detec-

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tor lay crushed on the trail. Chunks of fresh meat were divided among the fugitive villagers in their makeshift camps on the lower slopes. Their seer received his usual generous portion. His crystal ball had saved them again. The buckeyes of Mount Tabulum ate well that night.

II

THE Tinker of Mount Tabulum was skeptical.

"You are a machine. You shouldn't even be in the village. You might report us."

Moon held Toothpick up so the full volume of its lingual readout could play over the Tinker. Here was the man Toothpick said could reconstruct Moon's teeth and Moon was going to see that he did.

"I am a companion robot, thousands of years old," said the cyber. "The old chains of command were broken while I slept. My superiors are gone. My only loyalty is to Moon, who found me. Moon needs teeth."

"How can I trust—" began Tinker.

"Ask your seer, the Hip," suggested Moon.

Tinker wordlessly led his visitors to the Hip.

After a cursory glance at the newcomers the metachromatic-robed elder gazed into his crystal and nodded approval. The Tinker shrugged and took Moon and Dan to his hut. Crude tools of flint, shell and bone were arranged on a split log. Picking up a polished white stick, Tinker motioned for Moon to open his mouth. After prodding the gum line methodically for a few minutes he glanced into Dan's mouth. Then he looked at his pitiful tools and slumped into a squat.

"Those teeth are really worn out. Need full or three-quarter crowns on every one. Tin caps I can do—crowns, no."

Toothpick hummed a sharp request: "What would you need to do the restorations here? Now? You've done similar work in Society. Let's try it on the Outside."

"Tell him what you need, Tinker," said Moon with a toothless grin. "I've seen him make it rain. He can probably get most anything for you."

Tinker remained skeptical but the prospect of working with his hands again excited him. He had nothing to lose but time—and there seemed to be a surplus of that.

"Open up," he said, reaching for his retouched levallois point. He pressed the cold flint against the firm tissue of the gum line and picked out a yellow flake of dental calculus. He put the flake on the tip of his index finger. "This calcified debris is all around those stumps. My stone tools are probably strong enough to get it all out but it will be an awful lot of work. There'll be pain and blood—and a danger of infection. The black area, however—" he held Toothpick up so his optic pickup was in Moon's mouth— "is decay. Decayed dentine is softer than enamel, of course. But it's too tough for my primitive setup." He thought a moment. "I could adapt one of the power drills from an Agrimech's tool kit. It may bring a Hunter if we take one, though."

"I'll handle that," said Toothpick. "Go on."

Tinker began to show some interest in the project. He looked into Moon's mouth again.

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"Most of these root canals are dead, I'd guess. It would be a good idea to fill them all. Cure the dead ones and drain any root abscesses that might be forming. I'll need a rough metal wire to scrape out the canals and a medicated wick to cure them. Any antiseptic from a Hunter's kit will do to medicate—even dilute phenol or iodine solutions—and any woven thread will do for the wick. That should be minor, after we get a power drill set up."

Moon volunteered: "It's my teeth and I know most of the Agrimechs in the east valley. I'll leave for the tool kit now. Anything else you might need?"

"Don't load yourself down. Hunters may be on your trail in half a day. Any small metal pliers, pick-types or small hard drill bits—it's your mouth. The smaller and the sharper the tools, the less trauma. We can bury them under a rock till we need them—fool the metal detectors," said Tinker. He turned back to Toothpick. "I can use wax for the positive—sand clay for the negative form. I need metal for simple casting. The metal?" He looked around. "I only have a little tin."

"Wouldn't gold be best?" asked Toothpick.

"Certainly."

"Ball was wearing a cap when he was discovered." said Toothpick. "It had enough gold foil. We can fire up a simple charcoal forge one day when all the molds are ready—shouldn't attract any more Hunters than one of our regular campfires."

Tinker looked at Toothpick with a little more respect now that he realized how thoroughly the little cyber called Toothpick thought things out.

THE tartar-chipping and gum-trimming went smoothly enough. Both Moon and Dan dragged themselves around with swollen faces and rusty saliva for a few weeks but that was to be expected. However, when time came to drill away the black dentine some frayed will power began to show.

The drill bit was of a large coarse class that raised a lot of heat and vibration. The smell of cooking blood filled the village when the Tinker was working. Dan's dog mind considered it torture and even a hundred years of discipline proved inadequate to keep him on the Tinker's work table, the split log. Moon's nerves, too, were pretty shot. They were about to give up the whole project when Toothpick suggested using Molecular Reward to disassociate the pain.

Tinker dug up one of the console pumps taken from the neck of a killed Hunter. The last dose was the M.R. they were after. By diluting it one to a hundred they made a mouthwash that actually turned off the sensory and motor nerve endings in the mouth for several hours. For some reason saliva flowed very heavily while the M.W. was active but the Tinker made a flexible dam to keep the work area dry. From then on the work went quickly and—in slightly less than six months—Moon and Dan were smiling at each other with bright new teeth.

At first the bite surfaces felt irregular and unfamiliar but the chewing stresses adjusted the periodontal collagenous bundles until they were meeting smoothly.

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"We'll have to keep an eye on you for about three months," said Tinker. "Don't have any X-rays—but I didn't fill any of the root canals until the wicks smelled sweet. One could still turn sour, though. If either of you get a swelling it would be best if I drained it out the side of the alveolar ridge." He pointed to the cheek just above and below the tooth line. "That way we can save the root and crown."

Moon massaged his jaw thoughtfully.

"I'll let you know how it goes." he said. Then he turned to Toothpick. "Now where to?"

HUNTER CONTROL was empty except for the class five built-in cyber—Scanner. His myopic sensors were scattered over the Outside—Orange Country—which covered about a fourth of the continent. His memory banks stored data covering crop and harvest status, mech and buckeye movement and the presence or absence of Hunters.

Rook, an aging human monitor, wandered in carrying his morning cup of hot brew. He slumped slowly into his console seat. The warm drink diffused through his system, numbing arthritic pains and stimulating a mild enthusiasm for his work. He nodded toward the wall panel, which showed a map of Orange Country.

The topography flexed into three-dimensional relief, colors from chocolate to avocado indicating crop stages of cultivation, growth and harvest. These remained static, while movements of colored lights indicated activities of men and machines.

"Anything on the fisheye detector?" asked Rook.

"No longer located over the canal. One of the buckeye detectors failed during the previous shift and fisheye was moved to cover the gap," explained Scanner.

Rook frowned. Fisheye was his own project. To build a fisheye took weeks. Circuits sophisticated enough to distinguish between water mammals and humanoids were hard to find these days. He hated to see it being wasted on a hill somewhere, doing a job any warm-body detector could do. He called up Cass.

THE communicator screen focused. A hazy image of a younger man said, "Just a minute." The speaker picked up a box of wires he was working on and unplugged it. The image cleared. "What is it, Rook?"

"The fisheye."

"Oh, sorry about that. But one of the detectors in the thirty-seven-oh-three line lost range. I had to cover the crops while I worked on it. So far I haven't found the trouble. Sensors O.K. If the failure is in the image converter again we'll be months waiting for parts. Can't have a hole in the line that long."

Rook appeared irritated.

The young man continued apologetically: "I know how interested you are in fisheye—but even if there is an aquatic variety of the I people—they're no problem as long as they stay in the water. When they come out to take crops the buckeye detectors will pick them up. Remember that a simple fifty-Au-gram B.D. can keep an eye on twenty square miles of open fields—but one of your fisheye detectors can only watch a few hun-

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dred yards of a canal. And the F.D. is going to cost several hundred Augrams. It's just impractical to watch all the canals. Even if the aquatics do exist, they aren't much of a threat. Except for the dugong, we could use the B.D. readings. They catch a few canal surfaces. The occasional warm body moving there probably is just one of those herbivores anyway. You know how man fears deep water."

Rook slumped back into his chair—depressed. The dugong could not be eliminated, of course. The problem was more than man's affection for the last warm-blooded species to share his home planet—the dugong also kept vegetation from clogging the vital canals whenever the canal Harvesters were late. It took a F.D. at close range to tell a swimming humanoid from one of those Sirenia.

Rook was frowning.

"Don't take it too hard, Rook. If your grant comes through you can set up a bunch of F.D.s. Meanwhile, I guess we have to protect the crops—this week's harvest and next week's harvest."

After a moment's silence the younger man signed off, probably to return to his work bench.

Already tired, Rook turned to the dull task before him. His grant—for fisheye census or the proof of the existence of an aquatic I people—was classified under research. Long-range buckeye control depended on an understanding of their habits—but with next week's crops in danger, the big ES would postpone research. Perhaps indefinitely. He shrugged and woke up *Wolfhound IX*. The crew of Hunters was assigned. Coordinates were given. A Hunt.

III

MOSES EPPENDORFF steered his minisub carefully through the mile-wide interior of the anaerobic digester. Visibility had been improved by recirculating a stream of clear effluent through the center and adjusting the flow rate from turbulent to laminar, but massive islands of sludge still remained—acres of fungus and bacteria flourishing on the sewage nutrients. In the sub's lights these resembled multicolored clouds and trailing seaweed above and firmer gelatinous towers below.

He maneuvered close to a yellow, translucent mass about ten times the size of his sub and extended his sampler tube into the gelatinous material. He aspirated a fragment and moved on. So far it looked like a routine inspection.

"No sign of membrane activity," he said automatically after fifteen minutes of silence.

"You still have about a quarter mile to go. The first disturbance you'll come to is on the other side of the bubble curtain in the aerobic section," said a voice over the communicator.

Moses recognized D. J. Birk, his immediate superior in the Pipe caste—a demanding but fair boss.

Moses moved on through the aquatic jungle of microorganisms. His membrane scope saw nothing. The little cells—a micron and less in size—were polarized, of course. But the ion charge in their tiny cell walls was just too small for the scope's probing magnetic field.

Something had been picked up by the digester's sensors. Whatever it was, it had a membrane integrity on

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the level of a coelenterate and a size larger than his minisub. The data gave it sort of a ghostlike quality—it appeared in different parts of the digester, changed shape and disappeared, only to reappear at a different location. Birk had considered the readings as sensor malfunctions until he saw the caloric output of the digester. It had fallen when the "ghosts" had appeared. Electronic shadows don't eat —and neither do the other kinds of ghosts— so Moses had been sent in.

"I'm passing through the bubble curtain," Moses said.

Around him the floating islands of sludge became aerated and buoyed to the surface.

"I've got you on the screen. See anything?" asked D.J.

"Nothing. Visibility is pretty good, too—more than thirty yards."

"Most of the sludge has been activated in that section and the skimmers are removing— Watch it! Looks like a ghost forming up around you."

"Can't see anything. The turbidity is increasing a little. That's all—hey! Something just turned my sub over. Viewport clouded up. Can't see a thing."

"Turn off your jets. It is alive and delicate. Your jets are tearing it apart. Keep recording. It's carrying you up out of the range of this pickup."

Moses calmed down and deactivated his motor. A quivering, amorphous mass covered the port and blocked his view of the inverted world outside. The pressure dropped. The sub slowly righted itself.

"My instruments tell me I'm on the surface—but I still can't see."

D.J. switched to the surface sensors in the arched ceiling of the digester. Optical pickup was blocked by a tangle of glistening, white and rootlike structures. He tried another pickup about a hundred yards away—reported nothing. Just the usual gas pocket—an arched dome trailing fine hairlike mycelia and the fluid surface quiet and flecked with foam.

"Sit tight and keep your sensors on. You're safe enough. If we want to get you out all we have to do is turn on your jets and rip that membrane ghost apart. Let's see what it is up to," said D.J.

Moses activated his sampler tube and biopsied the thing that held him. Several hours later he biopsied it again. That bite shook the sub. The tensile strength of the thing had increased markedly. He was about to complain when the film over the port rolled up into a rope-like structure and moved slowly away from him. He pressed his face against the flat cold surface and peered out.

D.J. watched the ghost fade from the screen, leaving the sub's silhouette.

"The ghost is gone," he said.

Moses continued to stare for a moment.

He said, "Not gone. Dead."

His scope had registered a large sheet of ion activity when the creature was alive. Now the creature had changed from a huge amoebalike mass to a firm mat of tall white stems, each topped by a glistening white melon.

Moses amended: "Not dead—fruited. It has fruited!"

The sub sat in a bubble that was perhaps an acre in size and filled with stalks and melons. Most of the melons were gray and black—a few were split open.

He described what he saw to D.J.,

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heard his superior suck in his breath.

"The Amorphus. It's a fungus—a slime mold. I've seen them before in digesters—but only a few inches in diameter. Those fruiting bodies are delicious. If this is a large mutant of one of the edible species we're rich! Can you suit up and get one of those white ones into your cockpit?"

Moses put on his helmet, checking the air supply. The gases in a digester were not breathable. He would have to wait to learn if the slime-mold melon smelled like a truffle. He left the sub and returned.

Objective accomplished.

"We'll name it the Eppendorff-Birk Melon when we file our report. It may become a significant food item if we can get it started in the other digesters," D.J. said.

Moses shrugged out of his sticky suit and sat down beside the melon. It was ovoid in shape, about two feet long and one foot in diameter. He prodded its slick skin.

"Moses' Melon," he said.

D. J. was suspiciously silent for a moment.

Then he said cheerfully, "Right. Has a certain ring to it. Moses' Melon. I'll write it up that way and I'll add a recommendation for a bonus for you. How'd you like to go on a Hunt?"

Moses shook his head.

"Trophy-taking never appealed to me. I'd like to climb a mountain, though."

"A climb then. Fine. See you next week," said D. J., dismissing him.

EVEN in the off hours the tubeways were crowded. Half a million an hour passed through Moses Eppendorff's home station. He put on his

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nose filters and elbowed his way into the tube. The acrid stench made his eyes water. Humanity pulsed and flowed. The acceleration nauseated him and ruined what little appetite he was developing. Changing tubes twice brought him to his shaft city. The hundred-yard-wide floor of the shaft was covered with his anonymous neighbors—some queuing up at the dispensers, others milling to and from the tubeways, others standing idle. He started up the spiral walkway that wound up the sides of the shaft, stepping over a discoloring corpse that still lay where he had seen it the day before. Two hours later, bone tired, he reached his crawlway. Sleep came quickly. Tomorrow he served on the megajury.

IN THE crowded station a frightened girl quickened her pace. She wore the blue-white smock of Attendant caste. Through its folds her smooth body curves marked her as puberty plus four. Her green eyes darted over the crowd behind and around her—hundreds of blank faces flowing about her. She probably recognized the mass of nose-picking strangers that always seemed to fill the tubeways with its random movements—but now one pair of feet did not move randomly.

They followed her.

Rough hands reached for her through the crowd. Strong fingers bruised her shoulder, turning her into the knife point. The maniacal face, eyes too close together, aquiline nose and thin dry mouth were frozen into her memory molecules as the cold blade toyed with the soft tissues of her belly. Her screams and struggle went unnoticed by the anonymous crowd. A large blood vessel parted under the blade and her strength faded. She slumped to her knees as he began the second stage of his compulsive act. The crowd continued its random movements. A careless footstep on her limp left hand snapped two small finger bones. Other footsteps tracked the widening circle of red.

As the murderer-rapist completed stage two the viewscreen froze, and the megajury voted. The trial computer had assembled a complete picture of the crime this time, and Moses did not hesitate to press his "execute" button. The arguments for suspension fell on deaf ears—too many of the organically ill were awaiting suspension spaces as it was. It was no time to be overly generous toward the psychotics. The Murder-Rape-Syndrome and the mad dog Mass-Murder-Syndrome had increased logarithmically with the population and Moses had little hope that these killers could ever be returned to society at the present population density. He felt he owed it to society to press the button.

The screen switched to the cell of the accused. Same aquiline features. He was casually eating a light breakfast. His bioelectrical parameters ran across the bottom of the split screen. He did not even know when the megajury tally hit over fifty-percent. Heavy metal ions and toxic radicals tied up his enzyme systems and the bioelectricals began to flatten out—cerebral, myocardial, even duodenal.

Moses switched to light musicals and began to eat his own breakfast of woven protein. Another day.

HE ADJUSTED his cubicle air vent and took a deep breath.

"What does the Outside smell of to-

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day?" came a voice from the doorway. It was Simple Willie, his neighbor from the next cubicle, shaftward.

"Green," said Moses.

Simple Willie sauntered in and collapsed into a corner. His right hand was cupped toward Moses. Moses nodded. Willie held up the same cupped hand so the dispenser's optic pickup could register the unspoken order. A half liter of foamy dropped into the chute, charged to Moses.

"Green is a color, not an odor," mumbled Willie as he foamed up his nose and upper lip.

"I consider it both—like artichoke or avocado can be both a color and a flavor."

Willie drained his foamy dry and looked wistfully toward the opposite wall.

"Artichokes and avocados were more than just colors and flavors once. They were real things—parts of plants, I think."

Moses watched Willie in silence. Willie had been on the Outside. The excursion had started out as a hunt but after Willie had bagged his trophy an accident had occurred during his drug delirium and he had become lost. He had wandered around Outside for over a year and had never been the same after he returned to society.

He could not face the crowded tubeways or hold down a job. Society gave him calorie basic—fifteen hundred unflavored—and quarters basic—thirty cubic yards. He was living out his years quietly in half the space allotted to Moses. Whenever Moses came home Willie visited him to enjoy the spaciousness and flavors to which Moses' jobs entitled him. Willie was pleasant enough, Moses thought, but his habit of fondling his grisly, cubed trophy and mumbling incoherencies had earned him the nickname Simple.

Willie continued: "There used to be many kinds of plants—*yellow was the turnip purple was the beet dum de dum de dum dum good enough to eat.* I forget how the rest of it goes. That was a rhyme my mother taught me. Did you have a mother?"

"No, I don't think so," said Moses.

He knew that the embryogenesis laboratories had produced most of the present four-toed generation of Nebishes— the superior Homo sapiens.

"Too bad. I enjoy my memories of my mother. I'd like to have a family of my own—this living alone in these tiny apartments just isn't any good. I wish I had a son."

"Why?"

"It is sad to die—unmourned."

Talking to Willie always made Moses feel uncomfortable. He walked back to the air vent and changed the subject.

"I still say it smells green Outside. I think I'll go have a look for myself."

Willie recoiled. "You're not going —"

"I'll just climb up to the shaft cap and look through the grill. No harm in that. Why don't you come along?"

Willie withdrew into his corner and toyed with his trophy cube.

"Can't stand those crowds on the spiral walkway. Damn people. There are too many of them. I used to be able to fight my way through any crowd when I was younger. But that was before I went Outside." Willie took off his boots, exposed his three-toed feet. "Lost my toes out there, too."

Moses chided him: "Lost your toes and your guts. I guess that's where

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they got the saying that mankind is leaving its fifth toe and its initiative behind as it evolves into the four-toed Nebish."

Willie's face reflected both fear and anger as he sorted out his feelings. He stood up hesitantly.

"Maybe I will come with you, if—if the walkway isn't too crowded."

They filled their pockets with sweet bars, fat cubes and woven protein from Moses' dispenser and started out.

THEY crawled the fifty yards to the shaft and peered out onto the spiral walkway. Only a few middle-aged and apathetic adults straggled by. No crowd. They walked over to the railing and leaned out into the shaft. An eighth of a mile below the floor of the shaft was a hazy disc of heads. Above them the shaft cap was a vague glow—more than a half-mile straight up. They started around the upward spiral, passing anonymous crawlways of their neighbors in the shaft city.

An hour later they took a drink break—each quarter mile turn of the walkway only lifted them twenty yards. It would take them over three hours to walk up to the cap.

"Enjoy looking Outside?" asked Willie.

"Oh, I don't know—been so long. I find it interesting, I suppose."

"Humans used to live Outside." Willie's wistful expression returned. "Used to live in the ocean too—that's why we have gill slits as embryos. But the ocean and the Outside were just stages in our development. Now we've evolved into the Big ES—hive culture, colony people."

Moses was not sure of what Simple Willie meant by the Big ES—society, state or establishment. Simple Willie had talked like that for so long that now Moses thought of the Big ES as some sort of living thing that controlled mankind—but the concept, of course, was not logical.

"Used to need five toes, too—running and climbing all over like that. But now Big ES takes care of us—don't need five toes," continued Willie.

Moses looked at his own boot.

"*You didn't always think Big ES* was good?"

Willie smiled knowingly. They had discussed Big ES frequently. It was Willie's favorite topic.

"No. That's why I stayed on—when I found myself Outside after the drugs wore off. At first I couldn't stand it. All that open space—I wasn't used to it. And there was weather."

Moses waited for him to continue.

"That's changes in temperature, you know. It was light and dark. The air moved fast and then it stood still. The ground became covered with foam and then it dried. Weather!" Willie took another quick drink at the fountain and started eagerly up the walkway. "Maybe we'll see some weather if we hurry."

Moses followed him.

Willie realized his mistake in having shown enthusiasm about anything to do with Outside. He glanced about for the optic pickups of Big ES and slowed his pace.

"Weather is awful," he said. "Man wasn't meant to live in weather. Big ES explained that to me very thoroughly. When I came back from my wild life on the Outside they explained how man was meant to live in cities—not between cities where the I people

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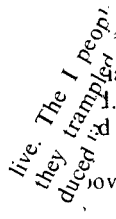

...e were bad because ... the crops and repro... ...als. That was explained ...l."

...d in silence for a time. ... filtering through the ...ove began to fade into ...

...ntinued: "Of course it is ... the I people to act like ...ey are part animal. Some used to think the I people were our five-toed ancestors but I'm certain we both descended from a common ancestor. They're just a blind end of evolution—unable to form large social groups of a billion or so—unable to survive." He made a gesture of disgust. "Eating human flesh—those five-toed creatures actually eat the flesh of their own kind—and any of the four-toed Hunters they catch. I can see how evolution may have equipped them with a reproductive drive that is a bit wild by the standards of Big ES—but I can't accept their flesh-eating habits. I suppose that is why I'm proud of my trophy—I hunted the last of Earth's carnivores."

At the rim of the cap they got a glimpse of a blue sky through a metal grill. Willie clutched his chest and sat down facing the blank wall of the walkway.

"I can't look out," he said simply.

Moses gazed through the grill, describing the scene out loud for Willie's benefit—sunset, plum and grape colors darkening to a star-speckled licorice. He and Willie sat on a featureless platform that ran around the yawning shaft. The grill—a stout one-inch gauge, six-inch mesh—ran up thirty yards to a roof which appeared to be rimmed with shaggy greens. In the gathering darkness a man-sized Agrimech scuttled in from the fields and disappeared into its garage in the base of the platform. Plankton ponds lit up and the fields became covered with the clouds of agrifoam which carried auxins and nutrients. Rows of distant shaftcaps marched to the horizon—each about a mile apart and each housing a shaft city of fifty thousand.

"Stars?" came Willie's plaintive voice.

Moses nodded.

"Bright and white. Some big like an eye peeking down. Others small and numerous like spilled metallic dust."

As he watched them blink he found the old familiar pattern of Orion—unchanged since he had seen it before, several years ago. The shoulders, feet and belt. During his subterranean existence he had had little curiosity about astronomy. Sewage was real. The sky was just a background for scenes on entertainment shows.

The night passed and an Irrigator trundled along a canal, drenching the land. Foam vanished. Orion marched westward until dawn erased him but Moses was confident "he" would return again. Outside seemed to have some stability and pattern to its roof even at night.

In the growing light Moses turned to see Simple Willie still sitting, his forehead pressed against the wall. He was not asleep.

"Willie—do you see things in the stars?" Willie cringed and covered his eyes and Moses reworded the question carefully. "When you were outside—the stars came out each night, didn't they? Could you see outlines of things in them? Things that came back again and again?"

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Willie did not answer. He rose slowly to his feet and slouched down the ramp. Moses took one last look Outside and followed. They walked in silence for several quarter-mile turns of the spiral.

Finally Simple Willie spoke.

"Don't remember too good. Stars? I know I must have seen them—but can't remember actually looking. Lots of things about my time on the Outside are all mixed up. Do you think it could have been the drugs?"

"Maybe—Speed does more than make you go fast." Moses spoke sympathetically. "Maybe the Big ES erased some of your memories, too—trying to make you a more useful citizen."

Willie stopped and smiled his relief. "Of course. The Big ES put in blocks to keep my nostalgic memories from flooding out of my deep amygdaloid complex. But the blocks are not complete. Some memories get through."

Willie abruptly sat down, again pressed his forehead against the wall. Sullen, morose and brooding, he mumbled something about the most beautiful creature he had ever seen. Moses tried to prod him out of his catatonic state but Willie's gloom deepened into stupor. Simple Willie spent much of his time so—Moses was used to seeing him in this condition. All that was missing was the grisly trophy cube Willie sometimes carried. After a half-hour Moses shrugged—left a few bars of woven protein, the flavored kind Willie liked, and went to his quarters. Willie would come out of it sooner or later.

Moses often wondered about Willie's sudden depressions. Drugs during or after his spell on the Outside could be the explanation—or Willie actually could have cracked under Outside.

Had Willie had some spe ience that had broken him Moses wondered if any conn existed between the trophy cube Willie's mumblings about the beau ful creature but Moses was not too good at anatomy. A trophy was a trophy. He wished he could at least tell the trophy's sex. He suspected that Willie's "beautiful creature" had been a female human. The idea fit Willie's obsession with reproduction during his lucid periods. If his trophy were also female—well, perhaps Willie had killed the only thing he loved. Moses did not like to think that of his neighbor.

IV

FOR several days Moses dialed for information about Outside. Star maps were available. They were coded under seasons but Moses was not sure what a season was. He did learn Orion's star pattern was permanent. Under plants he found a few scant crops—trees, vines, fleshy things and grasses. Under animals he found his fellow superior humans, the four-toed Nebishes and the lower, five-toed I people. The I people were described as cannibals and thieves—the varmints of the year 5000 A.D. The information bank estimated the population of the I people at less than half a million in a world that held over three trillion Nebishes. Then it editorialized that they would become extinct as soon as society found the funds for a really big Hunt.

Moses waited to see what other animals would be mentioned and was

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surprised at the brief list—mostly life forms that had adapted to mankind's subsistence civilization—vermin in his cities, a grazing aquatic mammal and a few shellfish in his irrigation canals. Nothing walked the land, swam the seas or flew in the air. Moses didn't miss them—never having known them. He was merely a little amazed that the total mass of animal flesh on the planet was one species—Man.

At the end of the week he checked in with D.J. at Pipe caste communications center. He sat on the edge of his bed, munching his breakfast, while the viewscreen focused.

"No need to come in this shift. Your Climb has been authorized. The Moses Melon looks like a success. It is a mutant slime mold. The troph stage is an amoeba that thrives in aerobic sludge. It coalesces in maturity to sporulate like a fungus. The boys from Synth plan to gray-age the melon and try it in the mushroom flavor line at first. We'll be rolling in Au-grams if it goes over. When you come back from your Climb check in again. We'll see how it's moving."

The words were what Moses had expected—more or less—but D.J.'s face seemed tight and his voice had sounded strained.

Moses Eppendorff's dispenser began to drop items for the Climb. He carefully checked his new suit of clothes for defects before he chucked the soiled ones down the chute to the digester. His kit contained food bars for the tube trip. He would be in the tubeways for several days—even without losing time at dispensers. Public dispensers had an irritating way of delaying a traveler—otherwise he tolerated them. After all, most dispensers were only class tens—and identities had to be carefully checked. Moses did not want a nonworker eating flavored calories and charging them to his account. He was not made of Au-grams.

Before he left he looked in on Simple Willie. Willie had made it home but he was still catatonic. His eyes were glazed.

FOR two days Moses fought his way through the stinking crowds. He was weak from trying to keep his footing in slippery excrement and crushed roaches, sore from tripping over neglected bodies and continually nauseated by the rotten vapors that saturated his nose filters. He was sorry he had come.

He stepped out at a strange shaft city to rest, saw the usual piles of refuse and hostile stares. He found himself dozing against the wall when he heard the sickening thud of a jumper. Another suicide. From the fragmentation of the skeleton Moses judged that he or she had started a quarter of a mile up the shaft. What bothered Moses was that the jumper had not had the simple decency to scream a warning as he/she approached—to give crowd on the shaft floor a chance to give him/her room to land. As it was, the jumper took a couple with him/her.

Moses was wide awake now. He elbowed his way back into the tubeway and continued toward the mountain.

A class nine mop brushed by. Its five-foot-tall snail shape took up the space of ten humans as it busied itself, wetting, scrubbing and sucking at the

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stained floor. Its thin-walled sac already contained one large lump that had elbows and knees.

The tubeway deposited Moses on the floor of the rec shaft. He found himself alone. A large dispenser called his name and issued him a heavy pack of rations. He stood, strapping it on his back, mentally complaining about his own Pipe caste. The Pipe people had designed a system that moved humans with their food, water and air all over the planet—thousands of miles—but only horizontally. Never up. The energy simply was not available.

Moses looked up the shaft. It was narrow—a mere thirty yards in diameter. The spiral walkway had a twenty per cent grade and only an occasional, abandoned crawlway. He could not see the top. A black pinpoint in the center of the dimly lit spiral marked what he guessed was the two-mile height.

He took a deep breath of the cold, damp, metallic air and strode out. Three hours later he passed three gray-haired men leaning on their packs.

He felt smug about his endurance until, an hour later, a girl—puberty plus seven—passed him. Her pack was about the size of his too. She wore the smock of the Attendant caste.

He stopped at the one-mile level to sleep. When he checked one of the crawlways he was surprised at how sterile the cubicles were. Without food and water dispensers man never nested there—and without man his vermin did not either.

Moses slept soundly for more than ten hours.

His Attendant met him at the top of the ramp. She was a puberty-plus-ten female—pleasant enough but dull-witted and sterile. He stood, sweating and swaying a little under his heavy pack—exhausted. She steadied him with a firm hand on his damp shoulder strap.

"Supper or sex?" was her greeting.

Politeness prevented him from growling, "Sleep." This was a Climb, after all. He forced a smile and carefully straightened his aching back.

"Let's try both," he said, "after I've refreshed myself."

"Saved us some water. Come on. We're family for two weeks."

She led him toward his room.

The stereotyped hetero relationship suited his psyche—but he was tired and the water was too cold and too scanty. She was openly bored—efficient but bored—and their cot was too hard for his tender muscles. The night became another nothing in his life.

Dawn was a bright surprise. At full blaze the yellow sun quickly rose above a pair of snow-covered peaks, filling his room with a blinding glare. One entire wall was transparent. His Attendant stumbled awkwardly from the cot and turned down the wall, changing the sun into a pale moon. Then she collapsed back on the bedding.

He walked to the edge of the room and looked down. Pyramids of monotonous cubicles covered the lower slopes as far as he could see—he was reminded of an obscene glacier. The black crags of the distant mountains still looked pure—they seemed to be naked rock—but the distance was too great for his visual resolution. He could not be sure that they too were not coated with windows. He hoped that at sundown they would remain black instead of flaming up with the

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reflected rays. That would be reassuring.

"Breakfast?" The Attendant was fingering through his heavy packs.

Odd, but when she began to share his food—food he spent two days hauling up from shaft base—she changed in his eyes. No longer was she an Attendant, here for his companionship. Now she was a parasite, trading her little efforts for calories—and flavored calories at that.

THREE walls of the bar opened to the Outside. But the walls were turned way down low, giving the place an eerie cavelike air. Moses could see hazy outlines of the sky and mountains Outside, although he knew the hour must be close to noon. In the darkness the four-toed Nebishes crowded, thigmotropically, around the massive stone bar, comforted by the warm elbows and hips of their fellows.

They stood before the dispenser in their standard-issue-tissue clothes—loose transparent garments of party people. Moses dialed drinks and joined the clot of people.

"Tell me again how you executed the murdering rapist," his Attendant said.

He grunted and concentrated on his drink.

A hostile, short man with a round, white face glanced his way, spoke loudly from across the bar.

"Not too manly—killing a prisoner by remote control and diluting the guilt in the group conscience of the megajury."

Moses had heard these arguments before. Now that they were directed to him personally they stirred up reflex hatreds. He was pleased to know he could still hate. The adrenal surge was surprisingly exhilarating. He and the short man eyed each other across a room filled with apathetics.

"Would you have put the psychotic in suspension—crowding out a good citizen who needed a place to await a cure for an organic illness?" asked Moses.

The hostile one sipped his drink and answered, "The crowding in suspension is all theoretical. Your button-pushing megajury is actual. You can't weigh a real life against theory. Ideas aren't that solid."

Moses parried with the obvious.

"What is real? And what is manly? Have you ever killed anyone?"

"No, but I tried. Didn't make a group activity out of it either. Went on a Hunt. Man to man. Didn't see anything, though," said the little man.

"But you were armed and going against an ignorant savage. Used drugs, too, I'll wager. That's not too manly."

"I was there, putting it on the line. Not sitting here talking big about a megajury killing."

"You're here now."

The little man's adrenergic response pulled him from his stool.

He strode around the bar shouting at Moses: "Look, killer—you're probably real good at pushing buttons. I went Outside but I didn't see anything—just the black dirt, some damn Agrifoam and a few shaft caps. No trophies. There were no buckeyes where the detectors said there were. I say the buckeyes are extinct—that's why I'm here and not on a Hunt. Waste of time—a Hunt."

Moses taunted him: "First you doubt the suspension crowding—now the buckeyes. Not too trusting, hey?"

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The little man calmed.

"I question lots of things—like what is on the other side of this mountain. More cubicles, they say. I say—nothing. This planet is empty, not crowded."

"The other side of this mountain should be no mystery. Let's climb up and have a look at it," challenged Moses.

The bar grew silent. All eyes moved to the ceiling where coils of rope hung from rusted pitons. The pitons, granular with age, were symbolic of the Climb. Most of the Nebishes came here to drink and watch. Today Moses and the little hostile one would entertain them.

Clumsy in his insulated gear, Moses crunched across the virgin snow to the edge of the balcony. A flexible ladder danced in the wind. The hostile crunched past and put his foot into a rung to hold the ladder taut. He gestured for Moses to go first.

Moses started up.

The hostile released the ladder jumped out of the snow and the wind sailed Moses out over the mile deep crevasse. Spinning like a kite, he saw the view rotate—sky, mountain and misty chasm. The vastness triggered primordial fears. His muscles locked rigidly. Around and around he turned until his gravity sense was lost—mists above and below merged. Time stopped. The snowflakes on his face plate refused to melt.

When the wind changed direction he swung back over the ledge. Dizzy, he looked down at the firm surface mocking him only a few feet below. The ladder's slack whipped up huge chunks of snow as it snaked back and forth. He tried to climb down but his fingers were still frozen to the rungs by fear. The group from the bar stood, drinks in hand, spectating through the open door and taking sadistic pleasure in his terror. The wind sent him spinning back over the void and he blacked out.

HE FELT himself falling. Screaming, he opened his eyes to see that he was safe on the cot in his room. Bulky dressings covered his hands and feet and his nose hurt. His Attendant hurried to his side with a liter of hot broth. She steadied his bandaged hands while he drank.

"Drink this. Try to relax but don't close your eyes until you get back all the sensation in your arms and legs. You'll feel like you're falling for a while. Your centers of balance are probably scrambled. You were spinning around out there for several hours before I got you down."

The broth was not too bad—woven protein, a vegetable bar and a couple of fat cubes. It strengthened him quickly.

"Thanks," he said. "Hope these bandages come off soon. Roundface's little trick wasn't so funny. I'm going to climb that ladder."

V

THREE days later Moses made the Climb easily. The hostile went first and was waiting on the ledge. Roundface cracked his helmet to speak.

"Sorry about the ride on the ladder the other day—but it was the best way I knew to cure your Outside

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phobias. How did you feel during the Climb today?"

Moses shrugged.

"Okay, killer. Follow me. We hike up the ridge to the snow line. Then it's a mile or so to the cave. We'll sleep there and go on to the summit in the morning."

Moses followed him silently. After a while the snow flurries forced him to close his helmet. The trail was narrow and rough. Ice and loose drifts of snow made the footing treacherous. Fortunately there was a line and pitons in the steep spots. At dusk they switched on their suit lights and continued toward the lip of the miniglacier. Moses sipped water and turned up his oxygen.

Glancing eastward at the other mountain range he saw the slopes begin to glow as the cliff-dwellers turned on their lights. Soon all the foothills were lit also—humans everywhere. Depressing.

Moses was getting tired of wading through the knee-deep powder when he saw the wall of dark stone. A triangular crack at the base formed the mouth of a cave. The hostile flicked his light inside and then began to walk random circles in the snow.

"Moses," he said politely. "You go inside and unroll your bedding while I try to find some firewood out here."

Numb with cold and fatigue, Moses wandered deep into the cave. It was about five feet in diameter at the mouth but widened out to three times that twenty yards inside. Odd. Moses thought he smelled wood burning.

"Okay in there?" Roundface shouted.

"Sure."

A moment later Moses was knocked to his knees by a clap of thunder that shook the cave floor and showered him with pebbles and grit. In the silence that followed he heard an evil laugh from far back in the cave. He held his breath, heard approaching footsteps.

Moses crawled into a corner and adjusted his suit light to tight beam. He fumbled for his small ice pick. The clap of thunder had come from the mouth of the cave. Since then there had been no sound from the hostile.

A flame danced weakly in the back of the cave. Moses killed his own light and huddled farther into his corner. What he saw chilled him.

A sinewy old man carried a burning pine cone on a stout spear. His legs were wrapped and he wore tattered rags and a loose outer cloak.

He was not alone. Walking before him was a squarish, four-legged beast that was supposed to be extinct—a seventy-pound, nonhuman carnivore. Moses did not know what the beast was but the long, well-toothed snout told its diet.

Man and beast moved past Moses toward the mouth of the cave. Several minutes later they returned. Now the old man carried something that looked like a human leg. It was being carried casually by its knee and it dripped. This time the procession stopped at Moses' hiding place.

"Moses Eppendorff?" asked the old man. He added without waiting for an answer: "Come on back by the fire. We want to talk."

From his seated position on the

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floor of the cave Moses viewed the beast as hopeless odds. Trying to carry his ice pick casually, he got to his feet and led the way to the fire.

The flame was small, stingy, fed by a few fragments of pine knot. The floor was littered with bones and small bundles of twigs. The bones varied from arched rib cages to whole skulls lined up neatly along the wall.

A buckeye camp.

"Pull up a rock and relax. I'll have something cooking for us in a minute."

The old man stabbed a stout peg through the leg and hung it in one of the dark recesses of the cave.

"You're not planning on eating that—"

Moses gagged.

"This red thing? Oh, no. That fresh stuff is too tough. I've got a nice aged quarter here."

The old man went to another recess and brought back a shrunken black object. It had a little mold on it and did not look human to Moses. He asked no question.

THE glowing coals flared up white and blue under the dripping meat. The beast lay, chin on paws, in the outer ring of warmth, waiting patiently for the scraps. Moses waved away his share. The old man tossed it to the animal. Man and beast bared gleaming yellow teeth and devoured their respective portions. Wiping his mouth on his forearm, the old man turned to Moses.

"The conditions in this cave are just right for aging meat. Makes the trip worthwhile."

Moses frowned.

"Meat? Wasn't that a human being you just killed? Don't you have any feelings?"

"Just so much protein to me. Can't have much feeling about one of the four-toeds anyway—parasites!" The old man pointed his short spear at Moses and admonished: "and I wouldn't waste any time mourning that one, Moses. He had the same thing planned for you. Didn't you notice the way he sent you into this cave first? He's been at this Rec Center long enough to hear the gossip. I've been here before—and they never know when I'll be back."

"You're a—buckeye?" asked Moses.

The old man stood up apologetically.

"Oh, I am sorry. We've been waiting for you to climb up here so long—and eavesdropping until we feel we know you. We forgot you don't know us. I'm Moon. Used to have a more formal name but we'd best forget it. This is my dog, Dan."

"Eavesdropping?"

"Toothpick spied on you. He has the circuits for it."

Moon gestured toward his spear.

"Hi," said the spear. "I'm Toothpick. Actually, your being here is my idea."

Moses stared at Toothpick—a machine. A very sophisticated machine. Certainly not a class ten.

"But why?"

"We want you to come with us—live Outside." said Toothpick.

"Impossible," said Moses. "Life is too short for me to spend it being hunted."

Moon handed Toothpick to Moses, saying, "Here, take him for a walk and let him convince you."

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MOSES carried Toothpick gingerly out of the cave. He passed a massive stone deadfall and stepped out under the stars.

Toothpick said, "Don't mind the way Moon talks and is. He has confidence in me because I'm so old. Actually I'm just a leftover cyber from the period when man had many of us. It was an age of high technology and low population density—man and his machines were all over the planet, in the sea and air—even off the planet, on the moon—other planets—even the stars. "I remember those times very clearly. I must have been on stand-by for thousands of years—until Moon found me. My power sources seem well charged. Moon and I have been traveling together ever since. He gives me intellectual company—a sounding board for my ideas. I try to protect him. I think we need you now—Moon and Dan are getting old. They're both over two hundred—had their genetic clocks turned off so their tissues won't age but the accumulation of scars is slowing them down. Their chances of surviving the next Hunt are small without your help."

Moses was watching the stars. He had heard of ancient experiments with genetic decoding. At first they were designed to find out why the four-toed humans made better citizens—docile, content. The gene locus that controlled initiative just happened to determine five-toeism. A byproduct of the research was the so-called clock—that polycistronic RNA that translated the genetic message of life span from the gene to the messenger RNA. It was easy to make a synthetic virus—a sort of antigene—that knocked out the clock. One injection prevented your cells from knowing when they were too old to divide again. You could still be killed by any number of the usual accidents, neoplasms or infections—but senility never came.

Naturally the clock project was halted when the implications became clear—there probably was a very good evolutionary reason for the previous generation, dying off at a specific age. Make room for the new. Moon and Dan were just relics from the past.

"Did man ever reach the stars?" asked Moses.

"I think so," answered Toothpick. "My memory banks are small and what they do contain was put in a long time ago. A lot of it doesn't make sense even to me. But I have a feeling that man did reach the stars before population pressures soaked up the space funds."

They talked through the night. Toothpick and Moon had walked over most of the major continents during the past thirty years. Conditions were about the same everywhere. In the tropical and temperate zones man had moved into underground shaft cities and cultivated every square inch of the surface. Vagabonds between the cities were tolerated when their numbers were small but were cruelly hunted when they became a problem.

Mankind was apparently making an evolutionary step with the appearance of the four-toed Nebish and his hive culture. A few five-toed strains remained but they were mostly outcasts like Moon. Five-toed an-

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cestors could also be found among the suspended who were waiting for some cure.

Toothpick did not like this new Earth but, Moses reasoned, he was a machine and naturally would prefer a world where he could play a more important role than that of vagabond.

At dawn Moon reset the deadfall at the cave's mouth. It was a beautiful job of stonecutting—if you could ignore the gore long enough to admire the precision of the counterbalance and the marble key.

Locking the key with his foot, Moon said, "Don't want anyone to get hurt while we're away—" and laughed.

He picked up a ten-centimeter section of tube and attached it to Toothpick's shaft. It had an optic pickup and had been set in the trigger area. Toothpick was more than a toy.

Moon moved back to the fire, sorted through the scant rations and then tried on various articles of clothing.

"This issue tissue certainly doesn't last long," he complained.

He glanced at Moses' kit, reassured himself that there was no need to divide. But he pocketed the food bars.

He was ready to lead out when Moses gave him an argument.

"Thanks for the invitation—but I won't be going with you. It sounds like an interesting existence. I just don't want to end my days as a crop-crusher and a fugitive—and certainly not as a cannibal," he said.

Moon flushed with anger.

"Do you really know what you're going back to? That secure position in your hive culture? What is your life really? You live alone with no possibility of changing your future. Jobs? Move the sewage or kill a psychotic. Love? Nothing. Don't tell me about your Attendant back there. The only reason she pulled you down from that ladder was to save her share of your rations. Future? You have none. That hive culture is reproducing only the four-toeds. If you come with us you'll have more children than you can count."

Moses winced.

"Have jungle bunnies—little kids that would be hunted all their lives."

"It is better to be hunted than not to exist at all. Look, you owe it to the human race to try to pass on your genetic fifth toe—Toothpick thinks you were born with the bud of one. The hive culture is the end of the evolutionary line for man. The hive humans will survive hundreds of millions of years as four-toed Nebishes. But it's the end of the line. Nebishes can't evolve. The hive is a living organism—each individual unit is specialized for one function. Even reproduction and sex are separated. If one Nebish actually developed a gene for some higher trait he'd probably end up in suspension. It only took a few thousand years to get from the discovery of fire to space flight. In the next million years the hive will accomplish nothing."

Moses glanced at the old man, Toothpick and Dan.

He snugged up his shoulder harness and said, "Well, I came to see the other side of this mountain. Might as well take a real good look."

TWO humans, a dog and a cyber made the trip to the summit of the mountain. The view was encour-

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aging—naked rocks, ice, snow and an endless blue sky flecked with small white puffs of cloud.

The old man waved proudly at the austere surroundings.

"No cubicles above the ten thousand foot mark. We can take our time along this range. Farther north there is the remnant of a tree line—a few real soft woods and lots of lichens."

They crossed a saddle ridge. Moses got a glance westward, saw a valley of geometrics. Monotonous tiered crops with their shaft caps and canals. Millions of the four-toeds were living in darkness while Moses enjoyed the sun and the wind.

He also learned. Toothpick tuned in on the agricultural robots and guided the group to food supplies. A few pounds of dried plankton gave them energy to reach the wooden tomatoes. A bedroll of those carried them into the grain fields.

When they had to cross open ground they trotted briskly, staying fifty yards apart. The buckeye sensors paid little attention to single warm-blooded forms. Family-sized groups and larger were monitored closely for the Hunts.

Moses saw his first family-sized enclave in the foothills—a pair of mated adults, a gray-haired female and three children. One of the children, a puberty-minus-one male, was dutifully guarding the approach path with a heavy spear. The adults glanced up from their clay bowls and flint tools as Moses, Moon and Dan approached.

Communication proved unsuccessful.

"Toothpick is having trouble with their dialect," Moon said. "We'd better move on before there is a misunderstanding."

Moses wondered about the Stone-Age level of technology at which the I people were forced to live. Apparently the buckeye sensors could detect metals at a much greater range than warm bodies alone. Any family that became "advanced" and started working with metal was soon Hunted out of existence.

Moon led Moses to a canal a short distance away and showed him how to forage it. Soon they were seated on the bank, munching shellfish. A bulky robot straddled the canal silently—one of the irrigators. Moses pointed to the robot's optic pickups.

"Don't we have to worry about that thing's reporting us?" he asked.

"Toothpick says that it's only a class eleven. Goes around checking soil moisture and spraying water. No circuits for buckeye detection."

Toothpick put in, "We must watch out for class tens, though. Anything that can run around without a track usually has enough brains to detect us. Harvesters, Tillers, Metal Gatherers—things like that."

Moses continued to munch thoughtfully. The flesh of the shellfish had a definite crunchy consistency. It gave him a rich, full sensation. Lots of good amino acids.

The water in front of him rippled noisily. He watched the spot. A large, ugly, humanoid head broke the surface, stared right at him and ducked under again.

"If he comes up again, throw him a chunk of meat," said Moon.

Soon a noisy, splashing group of fat mammals came around the bend

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of the canal. Moon stopped munching.

"They look almost human," Moses said.

Moon nodded. Dan barked excitedly and pranced up and down. Finally he jumped into the water and began to play with the nearest creature. The water mammal barked back. A tiny head, about the size of two fists, bobbed up and then under.

"That one looked very human," Moses said.

Then he saw it again—a human child riding the back of a nonhuman dugong. The mother, a human female—puberty plus four—left the water and approached.

Her wet clothes clung. Sullen and dark, her eyes were framed by a thick tangle of dark hair. Scum rimmed her chin and neck. She carried a wooden blade low in her right hand.

Toothpick called, "Back out, men. I detect a golden corpus luteum."

Moon jumped to his feet and backed up to the bank of the canal, picking up Toothpick. Moses followed. She paused and watched Dan leave the water, shake and run after his humans. Then she silently slipped into the water and crossed the canal below the surface. Moses felt a little sick when he realized that her underwater swimming was probably a defense reflex against Hunter's arrows.

"That was a coweye," said Moon. "They are dangerous in the luteal phase. Toothpick watches their infrared skin patterns. Hers was luteal or male. That means she's ovulated and has no need to mate. The coweyes are friendly just prior to ovulation—during the follicular phase. Their infrared skin pattern is very female then. All the right capillary beds are being perfused and warmed up"

Moses thought Moon was beginning to talk like Simple Willie. Had they met? Moon thought not.

VI

HUNTER CONTROL CENTRAL was quiet. Two monitors—Rook and Stan—studied the color changes on the large wall map.

"Looks like the Harvesters are about finished with the Jay sector again. Do we have a team ready to go in?" asked Rook, the senior of the two.

Stan picked up the three top folders from his desk and leafed through them.

"No. Just a few partials here so far. The craft won't be ready until tomorrow anyway. Only one of the buckeye detectors is operable on *Doberman III*. The tech thinks he'll have it up to a one-mile range by morning—but there may be a lot of false positives."

Rook took the top folder and frowned.

"Only one Hunter is in for a category nine—tactless achievement. We'll never get those buckeyes cleaned out at this rate. I wish we hadn't lost *Bird Dog XVI*. There was a good craft. He didn't even need a category nine on the team to make a successful Hunt out of it. Look at this pitiful assortment—mostly threes and fours. They'll never come back." He pondered, then decided: "If a partial is the best we can do for *Doberman III*—that's what it will have to be. Better send for this guy—category nine—what's his name? Oh, Yes. Dag Foringer."

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FORINGER put down his bow and pulled off his gloves. Wiping the sweat from his pinkish forehead he winced at the early sunburn. He felt he needed another couple of days on the range to sharpen his aim—but tomorrow was the big Hunt.

Later, partially sun blind, he squinted around the office in Hunter Central.

"You sent for me? I've still got a lot of practicing to—"

"Better rest up," interrupted Rook. "This time tomorrow it won't be padded targets you'll be plinking at. You'll need all the strength you have. Is your titrator working?"

Dag touched the thumb-sized pump stitched to the skin above his left clavicle and nodded.

"Had the skin tests for Speed and the M.W. too. Worked fine."

Rook and Stan glanced knowingly at each other. The skin tests were doses designed to give the Nebishes courage to face the outside. Extensive hypno-conditioning would otherwise be necessary. The drugs gave them instant courage—reckless courage. The Society-bred Nebish found the Outside very uncomfortable both physically and psychologically.

"Sit down," said Rook. "We have some training tapes we want to go over with you. You can take them to your cubicle and study them later. But you'd better not waste any more energy on the range."

The wall map flickered off and a larger view of sector Jay appeared. Several bright lines and spots marked buckeye sightings.

"The area for your Hunt is being harvested right now. Two hundred miles long and about five miles wide. One to two thousand feet elevation. Buckeye sightings—none today. But there have been eight in the previous week." The screen flicked to action shots of a hovercraft lifting off the ground in a cloud of dust and leaves. "This is your ship—*Doberman III*. A loyal ship. Weak eyes but a good tracker. Reliable. Sit tight after your Hunt and he'll be back to pick you up."

Rook paused to clear his throat.

Stan took up the monologue: "Now, Dag. These views are taken from the recorder of a successful Hunter. You see that movement in the bushes. That is his prey. One of the buckeyes—a male, I think. This is his second day on the Hunt and the prey is fatigued. There—that was an arrow. He missed. Now, here in the open flatland we can see the prey better. Naked. It is a male and a young one, too. He must be two hundred yards ahead. Another arrow. A miss. Now it is night. The detector indicates the direction and distance of the prey. Note how patient the Hunter is—walking carefully in the dark. Dawn of the third day now. The prey is sleeping in that pollen hedge. There goes an arrow. Another. A hit. There goes the prey—dragging himself deeper into the hedge. This is particularly instructive. Note how the prey turns on the Hunter when trapped. Never relax until you've taken your trophy. Good shot of the trophy there."

The screen faded from action to stills.

"These are some of the artifacts taken from buckeye camps. The ashes and charred bones are obvious. Primitives. Those were human and buckeye bones. This object is a bit worrisome

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here—the wooden spear. This one is broken but they can be over six feet long. With their fire-hardened tips they can be dangerous. They don't contain metals—your detector can't find them. Your arrows do show up on the detector. Don't leave any behind. There are some examples of pottery and weaving—even ceramics of a sort. But no consistent pattern. Each buckeye develops his own culture—living alone the way they do." Stan concluded, "That's it. Any questions?"

Dag Foringer wrinkled his sunburned forehead and shrugged.

"No."

"Well, get yourself down to the garage and meet *Doberman III*. You're the captain on this Hunt," said Rook. Dag stood up. He started to leave. "By the way." asked Rook. "What earned you this Hunt?"

Dag smiled confidently. "Fluidized a tubeway and diverted it into the protein synthesizers. Saved thousands of man-hours. The Orange fault line moved twenty-three feet and cut into one of the branch lines of the S.W. tubeway. Lost over a million citizens. I was directing traffic that shift. Could have been a major loss in downtime. But I just waited until the life-support indicators moved out three decimal places and fluidized. Chances were that everyone was dead already—but an hour later they were just so much woven protein and the Pipe people could go down into empty tubes to make their repairs. When I went off duty the tubeways were running again. My efficiency won me a three Au-gram raise and this Hunt. Seemed so logical at the time, I'm surprized no one thought of it before. These tubeway breakdowns aren't uncommon nowadays—and sorting through the bodies for survivors always takes longer than the actual repairs. Efficiency pays, I guess."

THAT night Toothpick warned Moon and Moses to sleep in a tree. They hurried several miles to a sweet-thing orchard. Their rest was short-lived. A sea of white Agrifoam covered the ground for a depth of several feet—foam that carried nutrients and plant hormones to push the crop to early maturation. It was of some danger to humans, Toothpick guessed, since it was used to carry insect hormones, too—molecules that triggered permature metamorphosis. While these were probably still used in some areas, they varied; and the cyber was never sure what prolonged exposure would do to a human's endocrine balance.

The Irrigator went slowly by, drenching them. The foam vanished in the downpour. They finally got a few hours of sleep just before dawn.

Moses breakfasted on the sweet things—orange, fist-sized fruits. Moon dropped from the tree, motioned Moses down.

"Hunters," announced Toothpick.

Moon and Moses dropped flat and crawled to the cover of a drainage ditch. Even Dan crawled on his belly. Moon rolled over on his back and held Toothpick as high as he could.

"Stay below the soil profile until we find out where they are," he told Moses.

Moses froze. He heard a rustling farther down the ditch. Something was moving in his direction.

Toothpick scanned.

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"There it is—a hovercraft. Must be a Hunt, the way they're circling that hilltop. About three miles away."

The noises in the ditch were closer. Moses glanced up and saw a pair of eyes looking back—coweyes.

"They've flushed something," announced Toothpick. "The craft set down for a second and now it is moving away at a higher altitude. They probably dropped off one of the Hunters."

The craft disappeared over the distant ridge. Moon and Dan crept up to the edge of their ditch to watch.

"Quiet back there," Moon whispered.

"Sorry," whispered Moses.

Several minutes passed.

"There he goes," said Moon pointing down the valley.

A naked figure running easily moved into the open and swerved toward the ditch.

"It's a buckeye all right—and something sure is chasing him," said Toothpick.

The fugitive passed them about a half-mile away and turned toward the canal. When he reached it he ran smoothly along the bank, apparently in no hurry. Then the Hunter came—new suit of green-and-brown camouflage—and the bow. He was fat and puffed loudly. Suddenly he stopped, took a deep breath, paused a few seconds, ran on smoothly.

"Speed," said Moon. "That buckeye is in for a good workout."

Moon dropped back into the ditch, explaining, "That Hunter will be awake and tracking for three or four days—on Speed. At the end of his Hunt that little pump on his neck will inject the M.R.—Molecular Reward. His body will be virtually torn to pieces by that much exertion but old M.R. will keep him euphoric until the craft returns and—Say! There's a coweye back here."

Toothpick interjected, "It is okay. She's in the follicular phase."

Moses partially untangled himself from her arms and legs.

"I found out," he said sheepishly.

HER dialect was fuzzy but she was easy to understand. She led them to her nest in the bank of the canal. It was a little foxhole lined with dry leaves. A two-year-old female child napped in it, warmed by the sun. For the rest of the day the mother dove for shellfish for the group. Moon played with the little kid. Moses spent the night in the nest with her. Moon, Dan and Toothpick stretched out at a respectable distance. Privacy—a luxury as rare as love—since both disappear when crowding distroys the meaning of sexual signals.

At dawn Moses was euphoric. Moon found him diving for their breakfast. The pile of shellfish was growing to banquet size.

"You'd better leave a seed zone," said Moon jokingly.

Obviously Moses had been sexually imprinted on the young coweye. It would be painful when the luteal phase came and drove them apart. Recent evolutionary adjustment had favored the females who mated briefly and traveled alone. Family groups attracted Hunters. As soon as her corpus luteum reassured her that ovulation had passed she would have no further use for her mate. In fact, he would be a real hazard.

"I'm staying," said Moses.

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She busied herself serving the men and feeding her child.

"I know," said Moon simply.

He allowed himself a brief appraisal of the female—good bone structure, clear skin and well fleshed out. A healthy one.

"We'll move on. Remember to stay below the profile of the bank. You don't want to attract Hunters here with a two-year-old. See that ridge about ten miles away? Toothpick tells me there is lots of safe cover just on the other side. We'll probably rest up there for a couple of weeks. If you change your mind, we'll be there."

"I'm staying."

Moses put an arm around the little female and hugged her briefly.

Ten days later he caught up with Moon and Dan in rough country. Dan wagged his tail three times.

"She changed," Moses said, perplexed.

Moon nodded. No comment was necessary. He had explained the hormone cycle before.

"She was so in love, I thought. So tender. She was so soft—her mouth, her fingers—so soft."

Moses remembered Simple Willie's mumbles about the most beautiful thing in the world. It must have been like that for him, too—love.

"But it wasn't love. It was just hormones."

"Don't say just hormones, boy. That was the best kind—old, basic love. She wanted to have your kid and she loved you. She loved you with every molecule in her body. That's how it is. You can't sit down and reason love."

"Why couldn't she let me stay with her? I could help feed her and the kids—protect her—help with the childbirth—"

Moon shrugged.

"Maybe you could have—one day. But not now. The Big ES has no room for family units. This is her way of surviving. Try to forget it for now."

ROOK stood in the garage as *Doberman III* returned. He didn't like the light, easy way the old craft maneuvered—almost effortlessly—as if it were carrying a small load. When it set down he walked over through the dust and opened the hatch. Dag was alone—thin, tan and stained with chlorophyll. He climbed out stiffly, then reached back in and picked up his cubed trophy.

"Got one. An old toothless female. I was on the trail of a nice young buck—followed him for almost two days. She started stalking me on the second night. Dangerous too—had this mean-looking wooden knife. Here, I have it right here. By the time I got rid of her I couldn't find the young one." Dag reached into the cab again. "Odd," he said. "She was wearing these beads. Thought I saw a similar string of beads on the kid, too—must be a charm—same tribe or clan. Got some good optic records. You can add them to your teaching files."

Dag Foringer gathered his gear and left without a word about the other Hunters who had not come back.

Rook patted *Doberman III* on his dust cover.

"Any idea where the other Hunters are?" he asked.

The old mech turned an optic cataract on his chief from Hunter Control and answered brokenly, "Put them down on buckeye spoor—routine. Covered eleven hundred miles. No

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sign. Their beacons are silent."

Rook might wonder—but Moses and Moon knew.

TO FORGET was easy in cow country. Moses came across another follicular phase or two every week. Hunters came and went—occasionally enjoying Molecular Reward—occasionally they themselves becoming hunted. By winter Moses had covered over a thousand miles with old man Moon, Dan and Toothpick. They worked like a unit now. Surviving.

"Harvesters," alerted Toothpick.

Moon and Moses paused on the edge of a wide belt of moist, freshly turned soil. Robot Harvesters moved along the opposite side, devouring the grain—leaves, stalks and all. The line of Harvesters seemed endless—rising over one horizon, disappearing below the other. By dusk the reaped belt was more than ten miles wide. The robots quieted as dew dampened the crop.

"Let's go across. We can't go around—and if we wait until the new crop is planted and grown we'll belong in the open," Moon said.

Grain offered little cover.

The going was slow through the soft soil. The group passed between the line of harvesters several hours later.

"Won't their buckeye detectors pick us up?" Moses asked.

"Probably," Moon said. "But it takes days to set up a Hunt. Toothpick will eavesdrop on their usual wavelengths. We'll know in plenty of time if any hunters are on the way."

When they came to the firmer ground they started to trot through the uncut grain. A quarter moon gave plenty of visibility. The scene seemed peaceful.

"Hunters. Throw me," Toothpick shouted softly.

They were coming to a quiet orchard. Some of the dark shapes were not trees—they were bowmen. Moon tossed Toothpick into the air and Dan started to bound toward the nearest figure. Bowstrings hummed. Toothpick suddenly emitted large white sparks that bleached out Moses' visual purple. While he was trying to regain his night vision he heard the sickening impact of an arrow with flesh. Someone yelled from the trees and Toothpick crackled again. Moses knew blackness and blinding pain, heard a loud ringing, felt a facefull of grain.

Fearful of the trophy knife, he fought his way to consciousness. His face was warm and sticky with blood. Time had passed. The eastern sky had grown light. Nothing moved. He sat up.

Moon lay curled around the feathered end of an arrow—a red arrowhead protruded from his left lower rib cage. His open eyes expressed puzzlement.

When Moses moved Toothpick called, "Quick, pick me up. There are more Hunters behind the trees."

Moses staggered toward the sound and found two bowmen near Toothpick. Small charred spots marked their uniforms over their precordial areas. He picked up the cyber. The Hunters did not move.

"Over to your right. Let's check them out," said Toothpick.

Moses moved cautiously past the still bodies of Dan and another Hunter. Several yards away he found the hovercraft. Four more Hunters were

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stretched out on bedrolls, enjoying their Molecular Rewards.

"They look harmless enough—for now. Pick up their bows and try to find a medi-repair-kit in their gear. Stay away from the hovercraft. It is a class ten and capable of defensive action," said Toothpick.

Moses returned quickly to the old man's still form. He put a tentative hand on Moon's neck and felt a pulse. The old eyes focused angrily.

"Yes—I'm alive. Although I don't know how. This damned arrow almost got me dead center. Have you got anything to cut off those barbs so I can pull it out? I can't lie here forever."

Moses took one of the wicked trophy knives from one of the cooling bodies and carefully sawed through the red arrow shaft under Moon's left arm.

Moon tied one end of a roller bandage to the shaft and began to coax out the feathered end. As he drew out the shaft the ribbon of bandage was pulled into the exit wound. He paused to let the woven fibers dampen, then pulled some more. When he had the arrow out he had a length of bandage running through the track. He tied

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the two ends of the bandage together.

"I heal up real good if I don't get infected. This should keep the wound open until healing starts. Can't risk an abscess."

He coughed. Red mucus bubbled.

"Dan?" the old man said, crawling to his dog.

The dog's golden teeth were locked into the throat of a Hunter. A few inches of arrow protruded from the dog's wide chest. It jerked rhythmically. Moon moved Dan off the dead Hunter and examined him. He patted the dog's head. The tail did not move. Both hind legs were extended straight out, motionless, stiffly unnatural.

"At least we know where the arrowhead is," said Moon. He watched the dog for a moment, then looked up. "Say, Moses—better get that scalp of yours sewn up. All that fresh air is bad for your skull."

Moon cleaned the younger man's scalp wound, freshening the edges roughly. Then he began to sew, talking as he worked.

"Wish the Tinker was here. He's pretty good with stitches. There, now—lie down for a few minutes while I check out that hovercraft."

He was gone a long time. When he

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returned Moses noted that his left foot was stained bright pink. Moses did not have to look into the Hunter's camp to know what had happened.

Moon walked over to Dan. The feathered tip of the arrow still twitched.

"Good dog," he said. "You killed the bastard."

He patted Dan's head. The tail did not move but Moses knew that it was wagging in higher centers. They rigged a travois for Dan and moved deeper into the orchard. Moon's pain doubled him up frequently and Dan's hind legs remained paralyzed. That night they decided to split.

"Dan and I will have to hole up for a while," Moon said. "You'll have to help Toothpick complete his mission by yourself."

The old man vomited up a small amount of black, granular mucus. He gently pulled the length of bandage a short distance through the wound. A small spurt of similar cloudy material drained from the anterior opening.

"Rather have it draining out where I can see it. That way I know it isn't pooling up and getting infected inside."

MOSES felt helpless. Dan lay quietly on his side. A dry red line matted the fur on his neck and chest. The old man talked to the dog in a monotone broken by coughs.

"Good dog. You killed the bastard. Want a drink, Dan?"

He repeated the words over and over.

Moses looked at Toothpick.

"And I was supposed to protect him," he said sadly.

"My error," said Toothpick. "The Hunters had their communicators off—it was the end of the Hunt. But I should have been more careful around any harvested area. I know that's where the bowmen are."

Moon scowled.

"Forget it. They still came out second best. We're alive and they're dead." He added softly: "There were three trophies in the craft—freshly cubed. One was a kid." He turned to Moses. "Your warm body isn't doing any good around here. It will just attract more Hunters. Get going. Take Toothpick wherever he's headed."

Moses backed off a few yards, saying, "Rest here a while, Moon. Toothpick and I will forage a bit."

Later he told Toothpick, "Can't just go off and let them die."

"It's what they want."

"I could run to the nearest shaft city for aid. They'd send a team of medi-attendants right out and—"

"And suspend the lot of us. Dan and Moon don't want to end up hooked to one of their damn suspension machines."

Moses nodded. He knew Moon would trade a few days in the fresh air and sunshine for a few years of vegetating in some underwater suspension coffin. He gathered armloads of fruit and returned to Moon and Dan. Moon had hooked the travois on his shoulder and crawled into the stamen hedgerow. Moses found man and dog covered with pollen under a screen of branches.

"Thanks for the fruit. This is a pretty safe spot for now—low enough—and nothing here to harvest. Let

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me check that scalp. Looks fine. Wash it whenever you can. Now get out of here."

Moses gave him a wry smile—Moon did not like sentiment.

"We'll be traveling north by northeast. Catch up if you can," Toothpick said coldly.

Moses traveled slowly for the next several months, looking back frequently. No one tried to catch up.

Running alone was lonely. Moses' skin had thickened and tanned. Weather did not bother him as it had when he had first discarded his insulated climbing suit. His muscles had firmed. He gave several Hunters a good run and then slept while Toothpick stood guard. In three or four days the Hunters' muscles were completely lysed by their drug-stimulated exertion. On one occasion Moses actually doubled back on a Hunter and witnessed the Molecular Reward—a placid, hallucinatory state. The Hunter was completely cut off from his environment and helpless. Moses could understand why the mortality rate among Hunters was high.

He moved through cooler lands now. Food was scarce. Toothpick always suggested a course that took them in a straight line—thirty degrees east of north. It was late autumn again—another year, another thousand miles.

"Harvested as far as I can see," Moses said. "Looks like we'll have to turn south if we want to eat again."

Toothpick ruminated.

"We can foray into that shaft city if we're quick about it. The doors are only class twelves. I'm a class six."

VII

HE APPROACHED the city through rows of misty plankton domes. Blobs of sticky scum marked the previous passing of a Harvester. It had been skimming the ponds. It would be a week before the ponds were ready for skimming again. He followed the Harvester's tracks right up to the blank face of the shaft cap—ten yards of wall broken only by baleful optics and the huge doors to the Agrimech garage. The grill above was dark.

Moses stood for a long moment at the door before it opened. He tightened his grip on Toothpick as he stepped into the nest of machines.

"Are they suspicious?" he whispered.

"Just sluggish. We're just another item in their memory banks unless we cause loss of life or materials. Try to get to the inner wall and find a door to the spiral walkway. Watch out for those little service robots. Some are blind. This isn't the safest place for a soft-skinned human."

The powerful Agrimechs slept in their bays while small Servomechs worked. Some dangled from ceiling cables while others sat on the floor surrounded by new and used components. The outer wall was strewn with broken parts and vegetable debris. Moses picked his way until he came to an inactive bay he could safely cross.

Moses melted into the apathetic crowd on the spiral and softened his face to match the surrounding lethargy. He matched their sluggish gait. Toothpick remained silent until they reached the first dispenser.

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"Let me handle this. Your Augrams have probably been confiscated," said Toothpick.

The dispenser issued one item of each food category and an issue-tissue garment. Moses staggered away under the load.

"Caution." Toothpick made a hissing sound, "The lighting is changing. Some shorter wavelengths are coming in. The scanners must be looking for the melanin and carotenoids in your skin—suspecting you're from the Outside."

Moses continued to walk with the crowd.

"Was it the dispenser?"

"No. For all it knew we were just one of the maintenance teams. It might have been your clothes—tattered and carrying plant pigments—but I doubt it. Your infrared skin pattern probably triggered the analysis. Your months exposed to weathering has thickened your skin and added pigments. Your skin is a better insulator now and it reads lower on the thermal scale than the citizens here," Toothpick explained. Moses quickened his pace.

Several hours later they were Outside again, back on their north-northeasterly course.

More weeks of travel brought them into colder country. They invaded another shaft city to obtain food and more layers of issue-tissue to insulate Moses against the frozen nights. Food production in this zone was entirely greenhouse, since both environmental heat and energy for photosynthesis had to be provided. They saw little in the way of foodstuffs—just the misty dome walls sweating frost on their insulated outer surfaces and other long lines of glowing green tubes pulsating with cultures of plankton. The ground was permanently frozen here.

Moses huddled against an outcropping and reached under his outer layer of clothing for his water bag and a food bar.

"Smell some brine in the wind," he said, drinking.

Toothpick was propped against the rock. He flexed his membrane charge and rotated his optic toward the east.

"We're getting close to the sea. The haze blocks the horizon at your wavelength but I can see the shore—about seven miles."

Moses chewed slowly.

"Not much sign of life around here. Just the machines making food."

Toothpick rotated and looked at his human.

"And expensive food, too. The energy cost per calories is prohibitive. These units would be much more efficient in a tropical sea."

Moses watched the pulsing green flow through the warm transparent pipes. It was easy to picture the same setup in a less hostile environment—lush coral reef or even the bottom of the ocean along the equator. The job of setting it up would obviously fall on his own caste—the Pipe people. He looked at Toothpick and shrugged.

"In theory it would be easy but in practice I found we were just too short of skilled Pipes. The four-toed Nebish is a docile citizen—but not too many of them long to crawl inside a sewer or a pump. Our caste is just barely capable of keeping present machinery functioning. New projects are impossible until we get more Pipes."

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"Five-toed Pipes."

Moses chewed thoughtfully for a moment.

"Five-toeds? Where can the Big ES find five-toeds? There aren't many left on the planet—except for the I people. And they're not really suited for this population density."

Toothpick flexed restlessly in the frozen air.

"Come on. I'll show you some five-toeds."

MOSES picked him up and they moved on toward the odor of brine. At the seashore an underground tubeway surfaced at a dock on the frosty tidal flats. A robot boat was taking on a load of man-sized sausage casings. They climbed on.

The boat, a twin-hulled thirty-footer, had its bulge of neurocircuitry at the top of a short mast. The open cargo space contained a score of eight-by-three-by-three-foot casings. Each casing was attached to a small console by a segment of tubing.

"Looks like a cargo of live melon vines or something," said Moses lightly. He leaned against one of the casings while he tried to see through its opalescent skin. The pressure of his elbows slowly pressed into the skin until he met something firm. He stepped back abruptly, almost dropping Toothpick.

"What's in there?"

"You're about to find out. Here comes another human being. Try to open the casing. I think there's a latch at the end opposite the tubing."

Moses crouched and glanced toward the bow. A human bundled in a thick, hooded suit was walking from casing to casing with a checklist. Moses fumbled with the latch and lifted off the top of the casing.

"A body—"

"No. A patient. Quick. Get inside."

The angry sea lashed the cargo deck with spray. The casings squeaked against each other. Moses crawled into the casing and let the lid snap shut.

Silence. He squirmed for comfort.

Later he snapped the lid open an inch to allow stale air to blow out. The whitecaps were still tossing foam onto the deck. The hooded figure was gone.

"Where is she?"

"She's below deck in the Attendant cabin—enjoying a nice hot drink and music and looking female." Toothpick was eavesdropping on the boat's life-support circuits. "We'll be en route for a day and a half. You might as well catch some sleep. Stick me out under the lid. I can keep an optic on things and give you some some air."

Moses tried to relax.

"Are you sure this guy is alive? He feels so cold."

"He's alive—in suspension. But he won't be for long if you go to sleep on his tubing. That coil carries his perfusion fluids. He doesn't metabolize much at this temperature—but he is still metabolizing and those tubes exchange ions and gases with the sea water. You can't press on them for more than a few hours at a time."

Moses rolled over and gently moved the coils of two-inch transparent tubing up on the patient's chest. One end was fixed to the head end of the casing. The other entered the patient's leg just above the knee.

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A similar tube ran into him from the opposite side.

Moses slept while Toothpick scanned.

THE second day out they began passing frequent masses of drift ice and spotty fog banks. Moses shut the lid when they came to a floating dock. Machines off-loaded.

Moses saw the silhouette—like that of a giant praying mantis—approach. Its two big arms cradled Moses' casing, unmindful of the increased weight. Two smaller arms worked on the perfusion tubing—unhooking it from the boat's L.S. console and attaching it to a smaller unit on the back of the robot's mantis abdomen. The offloader rotated its head, turned carefully on the wet deck and moved onto the gently rolling dock.

Moses watched the vague shadows through the translucent skin of the casing. The robot rolled on wide soft wheels up a long ramp and into a cavelike hallway. The stability and quiet told Moses that he must be in a hollowed-out cliff overlooking the sea. Probably on an island hidden from the dock by the fog.

An hour later he was rocking gently in a quiet dark water with thousands of other casings. Moses popped his casing lid for air and was drenched with icy brine. He left the casing, waded around in waist-deep water feeling for the wall the echoes told him was there. The tangle of perfusion tubes tied up his feet and shifting casings blocked his path. The cold cut through his thin issue-tissue clothing.

Toothpick produced a beam of visible light that enabled Moses to grope his way to a ladder. Dripping and shivering, he stood on the walkway looking over the acres of casings.

"This section has recent cases," Toothpick said. "Probably all four-toeds. Let's check deeper in the tidal caves. The older cases should be back that way—to your right."

Moses moved on—teeth chattering. He found an Attendant's unoccupied chamber and turned up the heat. After changing clothes and drinking a liter of hot broth he felt stronger. They moved on.

"THIS looks likely," said Toothpick finally. Moses stood outside an Attendant's chamber which had seen many years of use. The door handle was worn smooth by the thousands of hands which had come for the magic warmth inside. "The control boards will be close by. Try along that far wall."

Rows of tiny green lights covered the wall as far as Moses could see in both directions.

"Must be a million lights here," Moses said. "What do they mean?"

"A million patients in suspension. Green means the patient is alive. Yellow stands for trouble. Red is for dead."

Moses settled down in the warm, comfortable quarters while Toothpick checked the memory banks of the Life Support center. This section held just under a million patients. The most recent cases were from the year of Olga fifteen-twenty-four. Most were from before 1220 A.O.

"High incidence of five-toeds here," said Toothpick.

"How do we proceed?"

"Insert me into one of those sock-

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ets over there. Then you try to get out of here. The Big ES isn't going to like what I have to do. There will be security personnel all over this place as soon as they figure out we're here."

"You want me to leave you?"

"I'm a kamikaze Toothpick—expandable. I have to stay until it's over—"

"What's over??"

"Oh—oh. Company."

A hooded figure entered, suspecting nothing. The protective suit was thick and relatively soundproof. It carried its own entertainment channels. The lone Attendant for millions of suspended had little need to be extra-curricularly alert.

While Toothpick worked quietly in his socket, Moses crept up on the new arrival. He grappled with the loose-suited form.

"Tie her into that chair with some tubing and tell her to be still or I'll zap her," said Toothpick.

"Zap?"

"Never mind. I heard him—or it," the Attendant said, relaxing. "I don't know why you're here—but if you've brought your own rations you're welcome. It gets pretty lonely around here— Say! What's going on? Look at those yellow lights on my panel. There must be a dozen of them—"

"Tie her up," said Toothpick, twitching in the socket.

She sat open-mouthed while yellow lights sprang up all over the panel. A few times she wrenched at the tubing but Toothpick immediately made threatening sounds in her direction. Moses warned her quietly that Toothpick was no ordinary machine—he had killed four-toeds.

The frost melted from the chamber windows. The distant sounds of falling icicles echoed against the damp stone walls. The first red light appeared—a death.

The Attendant struggled against her bonds, spitting hatred at Moses.

"Murderer! What right have you to come here—killing my patients? Why in the name of Olga are you doing this?"

Moses watched the red light glow. He was puzzled. These patients were mostly five-toeds, according to Toothpick. Why was Toothpick fooling with the L.S. controls? He was killing them.

TOOTHPICK recorded the peculiar set of Moses' features but he was too occupied to explain. All his circuits were busy with environmental controls—altering incoming sensor readings to give ice-age temperatures to the L.S. mech brain, which in turn began to heat the perfusion fluids to compensate. Slowly the waters warmed. With each seven Fahrenheit-degree rise the metabolic rate doubled. The perfusion pumps strained to supply oxygen and nutrients to compensate. Robot Resuscitators splashed awkwardly about in the shallows, trying to save a few of the thousands who were sickening in the accumulating metabolic wastes. Even the air Moses breathed began to smell of ammonia and urea.

More red lights appeared. Harvesters moved through the tidal caves picking up the deceased and carrying them to the synthesizers. The protein wasn't wasted.

The Attendant continued to vilify

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Moses with passionate asperity.

"What are you—some crazy crusader? Well, this is not a psychotic ward, you know. It is a cancer ward. Those patients have organic diseases—tumors. Why are you killing them?"

More red lights flashed.

The Attendant tried reason.

"If you are an assassin—why kill them all? Tell me whom you are after and I'll help you find him."

Moses frowned at her. Expediency. She would finger one victim to save the rest. He looked expectantly at Toothpick, who seemed more relaxed now that the red lights were appearing.

The cyber spoke from his socket.

"We're not assassins come to prevent our political enemy from being resuscitated. We do not intend the death of anyone—but unfortunately many will die. Moses, you'd better leave. If they find you here you'll be tried for mass murder. Take her with you. I'll need three more days to complete my work here. I won't be able to come with you."

Moses hesitated.

"Couldn't I wait? Together we might be able to—"

"No. I can fool this one L.S. robot by sitting right in his sensory unit—but the other nine robot brains on this island are probably already picking up the increased heat. Their sensors are free. The warm air and water from this section will alert them. Should take at least two days for anyone on the mainland to get here—maybe three. After that the place will be sealed. If you're linked with it, you'll be found. Big ES is very efficient that way."

VIII

MOSES carried the Attendant lightly on his shoulder as he ran for the dock. The boat—a mere class ten—accepted his verbal orders without question and accepted him aboard.

"Thousands of red lights—" the Attendant sobbed.

The boat seemed to tremble with her crying. Moses motioned for her to be silent. Her eyes brightened. She spat at him. Scowling, he grabbed the front of her suit and twisted it in his fist.

"Go ahead," she told him. "You were real handy back there in the Dundas Caves—killing sleeping patients. You're not man enough to kill someone who is awake and looking at you."

The boat trembled off course. He jerked her to her feet and lifted her over his head. Through the cloth he felt her heart race. Her elbows were still secured behind her. He stepped to the rail and let her watch the gray, ice-flecked sea rush by.

She screamed insults at him. Her heart rate increased. He glanced into her face, saw bright eyes, a wet mouth. She was enjoying this—a masochist!

Moses dunked her into the icy brine and held her up to the cold blast of the wind. She fell silent.

He carried her below decks. The boat plowed a steady course south. In the warm cabin—bundled, dry and quiet—the Attendant held a hot cup of broth with both hands. Moses stood before her, shaking his fist.

"You're crazy—you know that? Repeat that hysteria and you're going to

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get hurt. Now just sit tight. I'll give Toothpick the two days he needs—then I'll let you go. Meanwhile you're stuck on this boat—with me. It's up to you whether you take a regular bath in that ocean out there."

She eyed his sinewy, tan forearm and licked her lips. A moment later she was on him, tooth and nail. She drew a little blood but as the struggle progressed around the cabin floor he detected a definite sexual quality in her attack.

Two long, hard days ensued. The light in her eyes continued in the hatred zone. Fortunately all her energies were directed at Moses and not at the boat's neurocircuitry. Their course through plankton farms and floating mechanical factories was smooth.

On the third day the boat turned abruptly westward.

"No," Moses told it calmly. "South."

The Attendant smiled smugly through her ecchymosis.

"This trip is no longer authorized. Try your muscle on Security."

He reached for the manual override and was knocked down by a bright spark.

"Field's on." She grinned. "Boat has heard the long-distance call. We're going to dock somewhere."

When they docked he picked up a spanner and shouldered his way through the lethargic Nebish guards. The tubeway crowds could not hide him. His cutaneous melanin and carotenoids marked him. He wrestled a new set of issue tissue from one of the crowd but still the optic pickups followed him easily. At buckeye wavelengths he was umber against a mauve background. Days of pursuit followed —during them he had no time to sleep. He stole food from daydreaming Nebishes as they left the dispensers. Whenever he dozed the security people closed in. Capture was inevitable.

"Open up!" he shouted to the door at the top of the shaft cap. "Open up. Let me Outside."

The baleful optic stared.

"Unauthorized," it announced.

A class twelve door—and it blocked his escape.

When he awoke in his cell the viewscreen showed an old man and a dog moving through a snowdrift. Moon and Dan. Moses watched the screen for several minutes before he realized it was the court computer simulating his crimes.

A chill went down his spine as he searched in vain for the gas inlets. Then he remembered that the walls were semipermeable membranes—they sweated toxic through radicles. He slumped into his chair. A large unappetizing meal covered the table. The viewscreen moved on to scenes of aquatic canal mammals and Agrifoam. Now there were three forms on the screen—Moses, Dan and himself.

He saw little errors of detail—and some errors that were more than details. Toothpick was sometimes missing. In some scenes Moon or Moses carried a staff or a spear. In others—nothing. Obviously the sensor records were spotty and the computer was filling in the gaps in information. The readings were taken at a great distance, he guessed from the fact that Moon's and Dan's teeth were white.

The final scenes taken in the tidal caves were quite sketchy. Evidently Toothpick was able to block most

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sensor readings in the section where the murders actually took place. There was even some doubt as to the innocence of the female Attendant. Obviously the court computer knew nothing of Toothpick's abilities and therefore suspected that the Attendant must have assisted Moses. It knew that Moses' background in the Pipe caste did not equip him to do alone what had been done.

He relaxed a little. Even his own biased eye could see many defects in the case against him. Where was his defense? The computer ended its simulation with the death statistics—a quarter of a million had died. A similar number had survived and were again safely resuspended—but another quarter of a million were still in doubt. Hundreds of Resuscitators were on the scene. The final count might be days in coming in. Big ES would push for a public execution on this one.

HE PACED nervously around the small cell, sat down again in the only chair—a seven-course meal and the viewscreen in front of him. His last meal?

The screen cleared and the face of an eager young man appeared—unusually eager for a Nebish.

"I am your Defense Attendant—Josephson. Can we talk?"

Moses nodded.

"You are being tried as a mad-dog killer," said Josephson glancing at his notes. "We will use the standard defense—M.M.S.—the Mass Murder Syndrome. Your blood is being checked for the ectodermal-debris-antibody right now. As soon as the results are available the computer will decide. Should be over in less than an hour."

Moses fingered the puncture wound on his arm. The Mass Murder Syndrome? Surely he was not insane. He watched quietly as Josephson began his argument.

"Moses Eppendorff was born with the bud of a fifth toe and with it he carried the gene for the ectodermal-debris-antibody. The antibody with which evolution equipped mankind for his struggles in the era of the individual. In the past it was useful in spreading mankind over the surface of the planet. Individuals cultivated forty acres each or took their fishing boats out alone. Crowding caused anxiety in the five-toed humans. Alone, they prospered. Crowded, they died. The court must recognize that free will does not play a role in the M.M.S. An individual with five toes—or even the congenital bud of five-toeism, as in this case—can not be crowded without forming antibodies against the ectodermal debris of his fellow humans. Loose hairs, scales of skin cells, drops of skin oils all drift into the environment and stimulate antibody production—an allergy against humans. High density population causes it in all but the hive species—ants, bees, termites and the four-toed Nebish do not become allergic. They can be crowded into the more efficient hive society—but men with five toes cannot. They develop the allergy—and the antibody-antigen reaction causes anxiety—anxiety that precipitates murders, suicides and abortions.

"Living in the cloud of ectodermal debris causes the antibody formation—cell-fixed, 'atopic' antibodies. Each new exposure to the ectodermal anti-

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gen causes the release of a serotonin-like molecule at the cell wall—the site of the antigen-antibody reaction. This serotonin-like molecule causes anxiety—molecular anxiety—the level of which varies with the individual. Some handle the anxiety well or convert it into psychosomatic diseases. Others do not handle it well. In these persons anxiety precipitates neuroses—or psychoses. The only escape is in fleeing the cloud of ectodermal debris—but at our population density this is no longer possible."

The court computer took over.

"Enough. The court is fully aware of the role of society's cloud of ectodermal debris in the precipitation of psychoses. Moses Eppendorff, however, lacks the antibody in question. The test results are now available."

Josephson looked perplexed. Evidently he had planned no alternative defense.

"But—but if he isn't insane why—why did he kill a quarter of a mill—"

He stammered to a halt, his question unfinished.

"Yes. Why?" asked the viewscreen.

It took Moses a moment to realize that the court computer was speaking directly to him. Sensors in his room would detect autonomic clues if he lied. He swallowed carefully, wondering which version of the truth would be safest. A few wrong words now would close his case with a roomful of bad gases and the court would move on to its next case.

"My name is Moses Eppendorff. I have been Outside for almost three years—but I've never killed anyone. My crime was traveling with Toothpick—a class six cyber. Toothpick says he is over two thousand years old. I'm sure he had a good reason for—"

"There is no record of a class six cyber in your travels," said the court computor. "Where is your Toothpick now?"

"He remained behind in the tidal caves. He isn't mobile. Your security people probably have him now."

There was a long delay while all the details of his story were checked. The screen switched to a workshop. Moses saw a group of technicians bending over a segment of tubing that had been opened lengthwise. Three homogeneous cylinders were exposed—as peas lie in a pod—one quartz, one black and one white. One of the faces in the group looked up.

The court asked: "The device left in the L.S. unit at the murder scene—have you analyzed it?"

"From its function we've guessed that it is a simple frequency converter—changing the thermister readings from warm to cold or cold to warm. There are many ways it could have been designed but so far we've been unable to make any sense out of this device. It must be a very primitive design, one not covered in our training exercises."

Moses stared at the screen. Toothpick lay open and nonfunctioning. The court asked him to identify it. Moses did.

"My sensors tell me you are telling the truth. But your concept of the truth does not conform to reality. Your Toothpick is not a high order of cyber. It is merely a simple device that alters temperature readings. The smallest portable cyber is a class ten. A class six weighs a ton. And that doesn't include a self-contained power source. Obviously this delusion is real to you.

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I will accept your plea of insanity."

Josephson relaxed. Moses sputtered. The screen faded to a dull white and mumbled something about final disposition of the case being put off until tomorrow.

ABOUT an hour later Josephson appeared at the door to Moses' little cell. He seemed excited. He carried a long bundle under his arm. Moses motioned him in. Pushing several of the dishes aside they placed the bundle on the table and unwrapped it —Toothpick.

"Court wants you to have what is left of your—device. Trying to classify your delusion, I guess."

Toothpick's long open case was empty. The three cylinders rattled around loosely in the soft white cloth wrappings. Moses' face registered pain at the sight of his cyber's innards. He opened his mouth to speak.

Josephson cleared his throat noisily.

"Court will try to classify your—problem—as metabolic or due to some sort of conditioning." His glance around the room reminded Moses that his behavior toward Toothpick was probably being recorded for use in this classification. "Can't let all this go to waste," Josephson picked up a chewy protein disc from Moses' last meal. "A little dry." He sipped one of the tall colored drinks. "Probably suspend you as soon as you're classified."

Josephson continued to sample the stale food. Moses absently picked up the cylinder that resembled quartz. It fit sympathetically and like a baton into his palm. Eyeing it analytically, he noted strange lights playing over its inner layers. Did they denote hope? Remembering where Toothpick's optic pickup and visible light beam had been located, he placed the quartz in the shell near the point. Trying to make his actions casual, he picked up the black cylinder.

The damned cylinder was not excessively heavy but it had a massive inertia. He could move it slowly wherever he desired but sudden movements met solid resistance. He made small talk with Josephson while he guided the cylinder into the shell. First he tried the black at the end and the white in the center. Then he reversed the positions—and got exactly nothing. With all three cylinders in place, Toothpick's innards still featured a six-inch gap. Moses could not be sure where the gap had to be located or if it represented a missing cylinder or other part.

After several tentative experiments at positioning, Moses tore strips from the cloth wrapping and tied them around Toothpick. The outer skin was pliable—but sprang open each time he pressed it shut. He set Toothpick down and stretched out on the cot.

"Thanks for the snack." Josephson again glanced at the unseen sensors. "Get some sleep. I'll see you first thing in the morning."

Moses let him out and shut the door. He stood for a long time staring at the door—then he collapsed on his bed, face down. His mind was all geared for self-pity. He could expect death or suspension at the hands of the court —and he was so young, had barely tasted life.

Suddenly his line of thought was frozen by what he saw. Toothpick's shell was closed. Had Toothpick's spirit returned? He was afraid to look again.

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Josephson sat in a small booth, speaking softly to the court.

"Anything incriminating?"

"No," answered the cybernetic jurist.

They both watched Moses lying on the cot. The bio-lectrics indicated he was still wide awake.

"Anything on his contacts?"

"I transmitted a pickup on his neighbor—William Overstreet—who has a record of having been Outside and killing a fellow Hunter. He will be transported here to stand trial with Moses if his interrogation is positive," answered the machine. "The three of them—a triple execution. It'll take at least that to close this case."

Moses rose and walked to Toothpick. Josephson perked up.

"What's he doing?"

"He appears to be hugging and kissing that device," the court computer answered. "His physiological parameters show a level of excitement approaching irrational behavior—and I'm detecting a magnetic field. Could that device still be functioning?"

"I don't know. Perhaps the field is caused by a battery of some sort. Your technicians found no circuitry. But don't let his irrational behavior fool you. He's as sane as you or I."

Moses relaxed on his cot, Toothpick on the pillow beside him. He faced the wall and touched his teeth to Toothpick's outer skin—bone conduction carried a faint voice to his eighth cranial nerve. Toothpick was alive.

"Moses. My memory was damaged by the crude surgery on my skin. I detect a large number of sensors in this room. Danger. You must keep my functioning secret. Court is a class six but his circuitry is very primitive. Technology has regressed along with the reverse evolution of your species —squeak."

Moses waited for Toothpick to begin speaking again. His heart raced. The court and Josephson were puzzled by the autonomic response. Biolectricals jumped all over the screen. A class twelve dial moved from true to false.

SIMPLE WILLIE sat fondling his cube, his unfocused gaze aimed through the wall. Five security attendants crowded into his tiny home and asked about Moses. Almost four years had passed since Moses had left. Willie had trouble with memories that old.

"He used to live next door," prompted one of the intruders.

Willie's face registered a question, a smile, a question again. Memory macromolecules stirred. A tear welled in Willie's left eye and clung to the lashes.

"Moses? Yes, I knew him. He used to talk to me a lot. He was my friend. Henry lives there now. Henry isn't anyone's friend."

"Reading in the Tee zone. Some confusion and psychogenic overlay," a deep voice mumbled in the background. It sharpened. "Willie, did Moses ever discuss the Outside with you?"

Willie froze. Little warning reflexes were activated deep in his basal ganglia.

"That's it," announced the deep voice triumphantly. "Reading way over in the panic zone. Bring him along."

SHE sat stiffly in her cell, heaping curses on Moses and denying vehemently that she helped him. Joseph-

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son enjoyed watching her squirm under the repeated grilling, knowing that she knew the workings of the court. Any question might be the last if her answer—or nonanswer—tipped her bio-lectrics into a pattern that fit the crime profile.

"Ask her if Moses ever touched her," he prompted, leering at her skin resistance tracing.

"Only to kill me," she spat.

Skin resistance dropped but the needle stayed on Tee zone. The court puzzled over the readings.

TOOTHPICK'S sonic whisper tingled Moses' teeth.

"Ask about the fate of the other third—the patients who are alive and unsuspended. They should be cured of their neoplasms. Assume the posture of a faith-healer come north to cure the suspended masses. Smile and think of the Hip of Mount Tabulum. You are now the seer of Dundas Harbor. You have awakened a quarter million humans and cured them of their diseases —cancer."

Over and over Toothpick repeated the instructions until Moses' cortex accepted them as fact. Acceptance was made easy by the fact that he had already witnessed Toothpick's spirit leave and return. The role of a prophet was simple for a man who had held a cyber that had brought hundreds of thousands back from the brink of death.

Moses stood up and shouted, "Where are my children? My followers? Bring them to me."

IX

THE scene in the Hearing Room began to unfold. Moses entered, wearing a torn bedsheet as if it were a flowing robe. He waved Toothpick. The viewers were reminded that the plea was insanity.

The female Attendant's vitriolic attacks and Willie's cube-fondling complete the picture. But when Moses began his tirade about the thousands he had brought back from the dead—and when the court acknowledged that many of the rewarmed patients were apparantly free from tumor—worldwide interest grew.

The oncologist twisted his pointer nervously until the court finally called on him.

"And would you tell the court how you can be sure the tumors are gone."

"We can never be sure that every single tumor cell is gone—but that is not important. What is important is that all significant tumor masses are gone. This membranogram shows a patient before cancer. The different shades of red reflect energy levels of tissues—bright heart muscle, lighter skeletal and gut muscle, pink liver and kidneys, yellow brain and almost black bones. Note the homogeneous patterns—the sparks of muscle movement. Now here is a patient with cancer. The membrane-scan picks up a coarse hot nodule. In this case it is in the lung. The tumor has a higher energy level—busier tissue—and an irregular outline. This is a later scan. The small grains of light are tumors spreading down the lymphatic channels. The body's defenses are losing and the tumor has broken out. Now you see necrosis in the tumor—this black central area is dead cancer tissue. The bright rim is viable, growing cancer. The bull's eye or so-called doughnut pattern is diagnostic."

He paused to let the demonstration

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sink in. While viewers watched the time-lapse scans the little grains spread, grew to large bull's-eyes with dark, necrotic centers.

The oncologist continued: "In some cases the tumor can grow and replace a large per cent of the patient's tissues. But even in these early cases the tumor's increased metabolism and irregular outlines give it away. Tumor nodules are easy to see—and when they are gone, they are gone. That is why they are not being resuspended. They no longer have cancer by our tests—so their suspension equipment will be used by others who need them."

Big ES grew alert to the restless masses of Nebishes who exclaimed, "A miracle—a new prophet has arisen in the Evergreen Country."

The court pressed for a scientific explanation.

"How do you explain these cures?"

"Heat," said the oncologist. "Raising the temperature causes the metabolic rate to rise. Tumors already metabolize faster than normal tissue, so they are more vulnerable to heat. The respiratory enzymes specifically. The enzymes that transform carbohydrates to energy. They double their reaction rates for each seven-degree rise—Fahrenheit. The mitochondria burn themselves out first. This has been known since the year one thousand Before Olga. Ancients used hot baths to cure pelvic tumors and fever therapy for all manner of neoplasm. The treatment is risky—note the mortality rate in this Eppendorff episode. The results have always been about the same—one third cured, one third mortalities, one third left with their tumors. The high death rate has taken heat out of current therapy—we are using suspension and waiting for a safer cure."

The court ruminated on the math. A third killed—a third cured. The statistics balanced. The charges of murder could be dismissed. But another crime seemed to be shaping up—250,000 persons had been restored to activity and life and now they must be fed and housed. Fifty shaft cities would have to squeeze in an extra ten per cent—an impossibility. Maximum use of resources had been reached a long time ago. There was not room for a single person, let alone a quarter of a million.

"Perhaps if you were to resuspend the cured patients for starvation, until more calories can be found," the court suggested.

The oncologist objected.

"Impossible. There is no precedent."

Josephson obtained permission to speak.

"These patients are mostly five-toeds. They would not survive in our shaft cities at the present population density. They all speak different dialects from their past centuries. I suggest that they be allowed to go Outside. They don't have the Nebish phobias—they'll be happy out there. Big ES should not try to accept responsibility for their sustenance. Moses warmed them up—let him lead them Out. They can drift south of the fifty-oh-oh line into the yellow-corn or the red-apple countries. Some of the patients are old and do not have many years of life left. Their problems will solve themselves—Outside."

The court liked the prospect of allowing Society's problems to walk away under their own power. It ordered the Synthesizer to speed up the

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processing of the quarter of a million who had died in the rewarming. Moses would need the woven protein and fat cubes to feed his following it was post-harvest time Outside.

THE patients filed out, squinting at the sunlight. White-haired and bald they came. Young and middle-aged they came. Some limped, others had raw sores where skin tumors had disappeared. They formed a living, drifting mass about a mile wide and four miles long—contracting at night for warmth and expanding during the day to forage in the freshly turned soil.

But they were made up of individuals—I people.

Hugh Konte watched the stars in stoic silence. His Edna was no longer with him. His memory had recorded poorly during the years prior to his suspension and he no longer was sure of when he had lost Edna. She had once been full of love, youth and vigor. He rubbed his neck. The hard nodule was gone. So were the other symptoms that had marked his terminal illness—yellow skin, red stools and the growing bubble of fullness in his belly. His cancer had vanished. Only itching, tender areas remained where proliferating fibroblasts replaced necrotic tumor.

The world had changed while he slept. He waited and watched—a sack of foodstuffs on his back, plowed soil under foot. Strangers crowded around him. Inside him nothing had changed. He was a man. Five years old or fifty—he would carve out his own little kingdom.

At dawn he picked his way through the herd into the younger, more vigorous crowd that was walking point. Hugh sought the leader. A lean ectomorph sprinted out into the lead, hesitated and faded back into the mass of fugitives. A burly male spoke loudly until he realized he was acquiring a following. Hugh looked into a thousand faces and saw nothing but uncertainty. The burly male fell silent. The ectomorph scurried about, exploring. But no one seemed to lead. Footsteps followed footprints—south.

Moses and several others sifted soil as they walked, searching for possible fragments of food overlooked by the Harvesters. They found only bits of lignin and cellulose left as a mulch. Some pieces were moist, chewable and contained a few drops of some plant juice but most were spongy and invaded by soil organisms. These inedibles, garnered during the day, were fed into smoldering campfires at dusk. These little fires, started by Toothpick's arc, marked the social units into which the mass of humans was fragmenting.

At night Moses sat in a circle of dusty faces around their pile of pink coals—bright eyes reflected. Stars blinked overhead.

"Need more combustibles?" asked Hugh, walking out of the darkness.

He handed Moses a fist-sized, moldy tangle of roots.

"Find a soft spot and sit down."

He set the clump of roots on the coals and watched the bright white sparks play over it as the dry mycelia flared up. Soon the roots were burning with a steady yellow flame. Moses talked of the harsh realities of life on the Outside.

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Hugh said finally, "I suppose we should be grateful the Big ES hasn't used Agrifoam while we're here. At least we can sleep at night. But no crops—no food."

"The court wants us south of fifty-oh-oh by the end of the month. Our food supply should last until then. There'll be crops below the line."

"Wouldn't it be better to split up into smaller groups right now?"

"Toothpick says to stay in the corridor. The way through here straight and quick. The Cultivators will be working on both sides. Don't want to offend the court."

Hugh stood up. The horizon to the south was dotted with shaft caps. Behind him the caps were surrounded by the sleeping multitude and their glowing camp fires.

"We'll have to split up eventually. Your description of the I people isn't too inviting, but it's better than suspension. Funny. When I was suspended I was the head of a big industrial complex—my own empire. Now?" He thrust his hands deep into his pockets. "Things certainly do change in a few hundred years."

He nested in the dirt around the dying coals and slept.

RUMORS of food below the border stimulated a brisk pace the following morning. Moses and Hugh worked their way around the right flank and watched the mass flow by. An hour later they joined the stragglers bringing up the rear. Canes and crutches were numerous here. The stragglers fell farther and farther behind us the day wore on. Limps grew worse. Crutch tips sank into soft earth. At dusk the main body camped, ate and fell asleep while the stragglers caught up.

"A lot of these aren't going to make it," said Moses softly. "I saw some swollen ankles that I'm sure won't be able to cover tomorrow's thirty miles—and we have almost a month of this pace to reach the border on time."

Hugh nodded. Some distance away were little groups of cripples who had given up. They huddled together in the darkness, miles behind. Having lost family and friendship ties while in suspension, they were unable to form new ties during the hurried exodus. Now they were arbitrarily grouped with the infirm of similar disabilities—each unable to help the other.

"I know the Big ES doesn't want to accept the burden of feeding all of us—but surely the stragglers won't be allowed just to die of starvation."

Moses, who had been on the Outside long enough to know, nodded in agreement.

"No one starves to death any more."

Hugh did not like the ominous tone in Moses' voice.

Before dawn the main body of the travelers was awakened by distant screams. Thousands of heads popped up from their earthen pillows. Frightened eyes strained back through the darkness of the trail covered the day before. Fuel was added to the small fires. Silence fell. Then screams rose from a different spot in the darkness. These did not stop. Someone was approaching the group of campfires—someone moaning and weeping loudly.

A large hulk of a man limped out of the darkness, carrying a spindly

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old man in his arms. The sounds were coming from the small, frail form. The big man and his burden collapsed at the nearest fire. Wetness glistened in the firelight—blood.

"Some deviate shot an arrow into Ed," lamented the huge acromegalic.

Moses saw that the shaft went right through the victim's thigh. He ripped open the trouser leg and tried to stop the bleeding while the giant related the story over and over.

"—and while Ed was screaming this—deviate—came up carrying a bow. He took out this little knife and tried to cut off— With Ed screaming and all the blood—I guess I lost my head and killed him. Pushed his face right down into the dirt and kept pushing."

The giant seemed so shocked by his own brutal behavior that Moses assumed he had been a very gentle man. His acromegalic features—giant head, hands and feet—gave him a very formidable appearance but he was in many ways helpless. His joints were large and inefficient—so arthritic and stiff that he had not been able to keep up with the main body of fugitives.

Later the wounded man slept—anemic and weak.

"Hunters." Moses handed the bloodied arrow to Hugh. "I've been wondering if the court's decision gave us any protection. This little episode removes any doubt. We're all fair game as long as we're Outside."

Voices rose up around the campfire.

"What'll we do?"

"Let's fight. Acromegalic killed one, and he's a cripple. They can't be so tough."

"Fight? With what—dirt?"

"We have this for a start," Hugh said, holding up the arrow. "Let's backtrack and find the damn bow."

The cold body of the Hunter lay at the attack scene—his head buried in the loose soil. They picked up the bow and his kit—food bars and the trophy knife. Moses stomped on the buckeye detector while it was still on the wrist of the corpse. A trophy was already in the Hunter's bag. Agrifoam closed over the scene and they had to wade three miles through the fluffy stuff to get back. The corridor was still dry.

At dawn the mass started to move again—more slowly this time, so there would be no stragglers. An occasional Hunter approached within bowshot—let his quiver of arrows fly into the anonymous crowd and then sat by until the mob moved on, leaving its dead. Moses tried to intercept the Hunters but four square miles of humans was just too big an area to cover. By sundown the fugitives had three more bows and a dozen arrows but they had lost more than twenty of their fellows.

"Survival is impossible under these circumstances," Hugh observed. "Let's test our environment. We're going to need weapons and food. What would happen if we kidnaped a couple of those big machines that come out and work the land during the day? Can Toothpick tell us how to disable their communicators so they'll obey us?"

Moses glanced at Toothpick, who was still held together by bandages.

"Squeak—I think so," said the cyber. "Neurocircuitry is usually color-coded a myelin-yellow. If you pull the antenna it should put a class ten on voice command-mode. Wouldn't hurt to try. They wouldn't deliberately harm a human."

In the days that followed Moses

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commandeered a score of the lumbering Agromechs. Sallies into the shaft cities produced tons of foodstuffs. The hive culture of Big ES didn't know what to do with an army—the first army on the surface of the planet in thousands of years.

ROOK shouted into the viewscreen, "Josephson, you fool—what have you done? We're scarcely able to handle an occasional buckeye down here. We can't spare one Hunter—let alone a hundred."

Josephson smiled cruelly.

"This is our chance for a really big Hunt. Thousands of trophies. Don't limit yourself to Hunters. Use supervisory personnel. Remember, they'll be crossing fifty-oh-oh next month—but they could be crossing forty-oh-oh two months later. The horde could settle right in your territory—just for the climate. You don't have our harsh winters. If we don't stop them soon they may be too strong to stop."

Cass whispered to Rook, "Cotton-white is mobilizing twenty craft. They'll be at fifty-oh-oh in two weeks."

"Okay. Count on Orange-sector for twenty dogs—ah—craft. We'll do our best."

X

THE Tiller lowered its appendages and turned over a couple of feet of soil. Moses and the two bowmen were vibrated from their comfortable seats on the upper chassis.

"Stop that. You don't have to do anything to the soil. Just hurry along and take us to point position at the head of the column," commanded Moses.

"Sorry, sir. Right away, sir," barked the mech.

Appendages up, it sped along.

"Those last three shaft cities were completely empty. Even its own citizens looked half starved," Hugh commented.

"The Big ES is going to try to starve us out. It doesn't care if it takes a few of its own loyal subjects with us. Don't worry about those Nebishes—they can just hop into the tubeways to get food outside of our area. We don't dare enter the tubes—the human monitors would fluidize them in a moment and we'd be just so much woven protein."

"Our supplies are running low."

"Fifty-oh-oh is just ahead. Toothpick says there is plenty of food there."

The Tiller lumbered off ahead of the horde. The horizon was cluttered with socio-political moraine—jumbled boulders and skeletons of derelict Agromechs that marked the border at 50:00.

"And we'll get there none too soon," said Hugh. "A few more days and we'd be loosing people to hunger."

The horde quickened its pace but came to a stop at sundown—still a half-day from its goal.

"Sent some runners to scout ahead," commented a group leader on the left flank as he and other organizers settled down around a campfire. "It was easy to get volunteers—there are few rations in camp tonight. The runners were anxious to see the bountiful crops Toothpick has promised us."

Noisy Agromechs patrolled the perimeter of the huge encampment.

"Bountiful—food. Squeak," said Toothpick. "Many of my circuits were damaged. Memory shot full of holes. Squeek! Bountiful food at fifty-oh-oh."

DAWN brought the return of the scouts.

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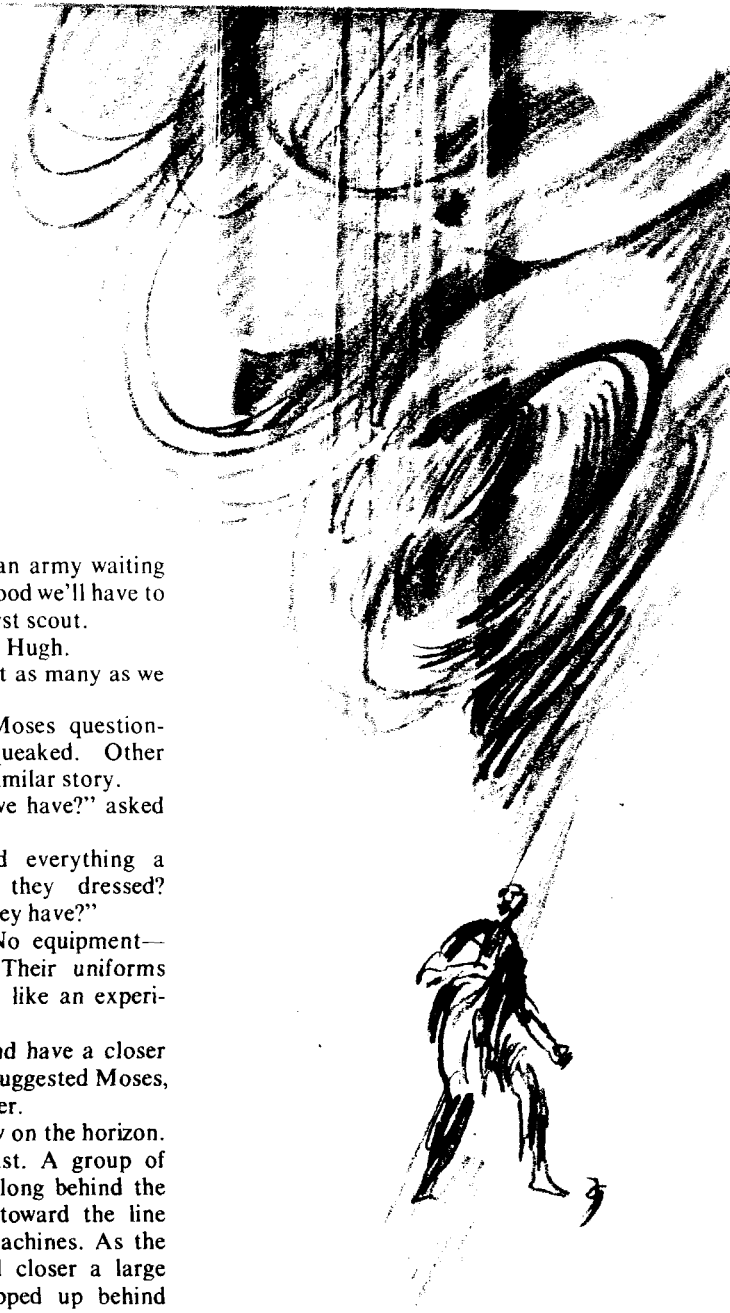

"Ambush! There's an army waiting for us. If we want the food we'll have to fight for it," said the first scout.

"How many?" asked Hugh.

"Thousands. Almost as many as we have."

Hugh glanced at Moses questioningly. Toothpick squeaked. Other scouts came in with a similar story.

"What choices do we have?" asked Hugh.

Moses said, "Hold everything a minute. How were they dressed? What equipment did they have?"

One scout said, "No equipment—just lots of spears. Their uniforms were tattered. Looked like an experienced army, though."

"Let's ride down and have a closer look in the daylight," suggested Moses, climbing up on the Tiller.

The sun was still low on the horizon. Mists hung in the east. A group of twenty archers filed along behind the Tiller as it trundled toward the line of stones and dead machines. As the advance guard moved closer a large number of heads popped up behind the barrier.

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The Tiller ground to a halt. Moses held up Toothpick.

"Any communicator information? What are they planning?" he asked.

Toothpick scanned.

"No communication." After a moment's silence he added: "Ball is here. We're meeting the Hip and his followers from Mount Tabulum. Those people are buckeyes."

"Buckeyes? Like us?"

The two armies faced each other, bristling with suspicion. Moses' horde had machines and the technical ability to use them. The Hip's buckeyes were physically stronger but outnumbered. Their males and females alike carried weapons. Jungle bunnies whimpered at coweye breasts.

JOSEPHSON sat in his hovercraft over the horizon and watched the two armies on the screen.

"A third of a million trophies," he said. The hovercraft were gathering in the valley behind him. Hunters, half drugged and half hypnoconditioned, did not even notice that they were Outside. Tunnel vision and myopia kept their phobias untriggered. They checked their gear. Large quivers were loaded with arrows.

Josephson searched for a channel to Rook in the Orange sector ships.

"What is your E.T.A.?"

"Be there in three days," answered Rook.

He led his squadron rapidly up a canal to the next refueling point. Mechanics struggled to keep the ships together.

Three days was an optimistic guess.

MOSES faced the Hip over a campfire in the neutral zone between the armies.

"What brought you here?"

"Food," said Hip. "Ball has been leading us farther North with each feeding. There is supposed to be plenty of food at fifty-oh-oh."

"Food is what we came for, too. There's nothing behind us but plowed earth. The food must be on your side."

Hip shook his head.

"The land is freshly harvested on our side, too. The Ball and Toothpick must have made a mistake."

The Hip spoke sadly. His bald head was bowed toward the fire. He was silent so long that Moses began to think he had fallen to sleep.

"They're just machines, after all," Moses said. "We'll just have to make the best of things. Hunters have been harassing us off and on. If we cooperate we can have a pretty secure perimeter at least. I don't know what we can do for food. Raid the shaft cities for a start, I guess."

The first day of the truce went smoothly. Buckeyes knew the Agromechs—having lived with them in their fields—but they were amazed when members of the horde from Dundas demonstrated their presuspension skills at repair and maintenance. They transferred energy from one mech to another—even raided a garage for more power. One of the class twelve doors on a nearby shaft city had been disabled and the Agromechs used its power outlet.

"Unauthorized. Unauthorized.' shouted the door.

The mechs with their human riders filed in for recharge. Moses and a couple of bowmen stood about—alert.

"Another Toothpick is near," said Toothpick.

Moses shielded his eyes against the glare of the sun outside and scanned

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the fields. Far in the distance he saw a familiar figure—a lean old man carrying a spear. Beside him hobbled a dog.

"Moon and Dan," Moses said incredulously.

Moses walked out to meet Moon, brought him to where the action was. The two Toothpicks eyed each other. Moon tapped the frame of the disabled door and smiled. His golden teeth glinted in the sun. Moses noted the increased bulk on the old man's frame. He had been eating well. His dog, Dan, looked fit also—except that his left hind leg ended at the tarsus and his tail did not wag. The right leg looked well enough and the rest of Dan seemed even better muscled than before. A star-shaped scar marked his chest.

After advising Moon of the situation Moses added: "The Hip is here, commanding his buckeye forces."

Moon frowned.

"He may be the Hip to you but he's just the Ass at Tabulum to me. Anyone who'd start a religion with a cyber just so he doesn't have to get out and scratch for his own keep is no damned good."

Moses said, "Now, now. Looking after thousands of hungry people is no easy task. I know. I've got a lot of hungry followers myself. And right now we all could do with a little food."

Moon cursed, said, "Why, there is always plenty of food around. Lend me a squad of these bowmen and I'll get you all you can eat."

"But we've been all through this shaft city—and the others in the area. There just isn't any food. The Nebishes themselves are starving."

Moon smiled. Moses remembered seeing the same wicked smile in the cave after his Climb.

"Of course it won't be properly aged."

Moses winced. Well, if matters had to come to that—he would still survive.

"Okay, Moon. I'm sure cannibalism would be all right with the Hip's people. Mine may be a little reluctant at first—but there seems to be no choice right now."

THAT evening the leaders sat around the campfire and discussed harvesting the shaft city. Hugh took it surprisingly well.

"I suppose we can rationalize it—since man is a carnivore and since he is practically the only animal life form left on the planet. It follows that if he is to eat fresh meat at all—it will have to be—" He paused, tried again. "Of course, if we accept the premise that the four-toed Nebish is actually a different species—then we're faced simply with a problem in logistics. A hundred thousand pounds of meat a day will keep our people from starving. A full shaft city should last us two months. Then we could put up a blind at the mouth of the tubeway and hunt the tube passengers."

Hugh drew diagrams and numbers in the dust by the fire.

The heavily boned acromegalic stood sadly alone, listening to the last generals on Earth plot out the survival of their own people at the expense of others. Survival! Was that the basic rule of life? He looked at his huge hands. Could he kill again? While he debated with himself he realized how much worse was the alternative—suicide by inaction.

The night wore on. Arrows were sharpened as warriors-become-raiders

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made ready. Suddenly the two Toothpicks and Ball set up a keening that bleached out everyone's adrenals. Eyes were wide open before the cerebral alpha waves had disappeared. Sleepy men and women clutched their weapons and wrapped their scanty belongings into bundles. But there was no place to flee. The horizon was dotted with dancing headlights of Hunter craft in all directions. The hovercraft circled and weaved but kept their distance at about three miles away.

"Probably waiting for dawn and better hunting," Moon said when the pandemonium had settled.

Moses and Hugh went into a huddle with the Hip.

"This may not be too bad after all," said the Hip. "We may lose some men but our Agromechs will give us mobility and cover. Our men don't have to be drugged to fight Outside. They should be fairly efficient, even if they are a little weak from hunger. Might even pick up a few hovercraft if we win this engage—"

As if on some cue two Agromechs exploded. Then a third.

"Self-destruct signal—tight beam," shouted Toothpick. "Move wide of the Agromechs. They're all going to blow."

A few hours later a ring of smoking machines marked what had been the buckeyes first line of defense. Moses backed his people toward the nearest shaft city.

"Fall back to the shaft caps. Bowmen, take up your positions behind the grills," he ordered.

Response was sluggish at best. In the dark and confusion comrades were lost. Units were broken up. The explosions and fires added panic to the army's hunger and despair. Bellies had been empty for too long—and now their owners faced an overpowering enemy.

The acromegalic raised a heavy stone and pounded the shaft door, denting and chipping it.

"Entrance unauthorized," said the door.

Suddenly he was thrown to the ground in a shower of sparks. Struggling awkwardly with his bulky joints he tried to stand up. A bowman picked up a stone and struck the door. Sparks flew. The bowman fell. The crowd edged back. In the subsequent silence they heard the ominous buzz of a force field leaking energy into the atmosphere.

"Field's on," warned Moses' Toothpick. "The Big ES has isolated us Outside."

The other shaft caps began to spark and buz. Moses watched helplessly as his army crumbled into aimless flight, marked by the random shrieks and moans of the weak being crushed by the strong.

"Rally to me. Rally to me," the Hip shouted as he marched off, Ball glowing.

A clot of followers formed behind him. Guided by the pale beacon of the Ball, the clot grew—a widening belt of calm in a turbulent sea of struggling bodies.

Moon picked up Dan to avoid the crush of the crowd flowing toward the Hip.

"There goes the Ass from Tabulum again—having one of his mystic fits."

Moses smiled.

"What does it matter? Anything is better than the disordered mess we had a moment ago. Listen, they're even starting to sing."

The wind changed, carrying back the words of a song out of antiquity.

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Few knew the lyrics---the words came scattered.

We will gather at the river. The beautiful . . .beautiful . . . river. We will gather at the river . . .

Moon stumbled over a tangled mass of shafts and cord. He groped on the ground and came up with bows and arrows, a spear.

He groaned.

"Those fools. They've dropped their weapons. In a few hours we're all going to be carved up by trophy knives—and all they can do is sing."

Moses glanced at his Toothpick. The cyber spoke.

"There is an old river bed just south of the fifty-oh-oh line. Hip is leading his followers there. He is chanting about a Great Coming Together."

Moon asked acidly, "And the Hunters? What is going to save us from the Hunters?

Both Toothpicks answered with one voice, "Love will save us."

"Love will save us?" muttered Moses.

The concept was so alien to him that he could get no hold of it. He felt utterly lost.

THE Hunters began to stir. Josephson had been monitoring the sensor readings from the buckeye camp. He collated through the main computer and smirked.

"The chanting—prayers and hymns —a superstitious bunch, those buckeyes. Relying on a five-thousand-year-old legend for protection. Desperate, I guess."

THE Hip stood in the riverbed of the once mighty Mississippi and watched his followers file down the slopes.

He raised his glowing Ball toward the stars and chanted, "Olga is love."

A narrow pencil of light shot up toward the heavens and a ball of fire appeared. At first it was a pinpoint but it grew and rapidly approached the ground.

A miracle.

Moon and Moses pointed their Toothpicks upward—three pencils of light reached toward the ball of fire.

JOSEPHSON rocked back in his seat. Hundreds of flaming objects appeared in the skies. They darted to earth, rested a moment and streaked back into the night sky. A voice—metallic and feminine—broke into the Hunter's communication net.

By the fiery wheels of Ezekiel and the flaming chariot of Elias will the Children of Olga be delivered from the Hunter's arrows to dwell in their rightful place among the stars . . .

Josephson waited for the sun to climb well up into the morning sky before he led his Hunters over the boulders that marked the 50:00 parallel. But there was no hurry. He knew what he would find. Only the shaft caps, a few burning agromechs —and their Molecular Reward.

WHEN the last shuttlecraft was safely docked in her belly *Starship Olga* left Earth orbit and headed out. Processions of people moved through her vascular tubeways, still chanting, some wordlessly, others seeking words.

Simple Willie pressed his forehead against the humming bulkhead. His chest pain had lessened but the thought of all those stars out there in

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the emptiness of space still made him nervous. He turned to Moses, who had found him.

"Olga told me that my trophy was from a male—one of the Hunters. She says she will be able to unlock my memories so I'll be able to remember—the most beautiful thing in the world."

Moses smiled.

"If Olga says she can do it—she can. Now get some sleep. You want your cortex rested when she starts probing tomorrow."

Moses stretched out on his own bunk and shut his eyes, smiling. Toothpick had finally briefed him fully. Olga had returned. The mighty starship had dropped her colonists off at some distant star and returned to Earth for another shipload of her five-toed humans.

"So you were a probe from space, Toothpick," Moses said without opening his eyes.

From his bracket over the bunk the cybernetic javelin answered, "Even a class six knows only what he is programed to know. Judging from the size of the Hip's following and our success at Dundas Harbor—I'd guess Olga's harvest of five-toeds was very successful."

"And there was only minimal disturbance among the planet's superior life form—the Nebish."

"That may not have been a factor. Remember the casual way I killed four-toeds? I was obviously programed to consider only the five-toeds as human. To me the four-toeds were just a competitive life form—and a lower one at that."

Moses opened his eyes.

"I guess we are the higher form. Olga confirmed that by selecting the humans with five toes for her new colony. I consider us part of the cream of the human race—skimmed off Earth. The Nebish is just unsuitable—inferior."

Olga spoke, her voice coming from the walls near Moses' bunk. It had a Nordic quality.

"Don't be too smug," she said. "You were selected because you show a higher individual survival potential. You still carry the gene for the fifth toe and the initiative that goes with it. The individual human is a very competitive—ideal for an Implant colony where he must adapt and evolve. Evolution on the individual level is measured in mere hundreds of years—social and industrial.

"The hive is much more stable—evolving in terms of millions of years, and then toward death. It lives by the status quo. A hive will only become competitive when it is faced with another hive. Then it will do what it has to do to survive. It can come into being wherever your species is too successful—a product of population density."

Moses glanced at Willie, then at the wall.

"We're all seed of the hive?"

"Seeds—yes," Olga said with a note of sadness.

Moses caught her shift into melancholia.

He said, "You kept your existence a secret from Earth Society while you were harvesting the five-toeds. Do you fear the Big ES?"

The mighty starship continued her navigation, propulsion and life-support functions while a small part of her neurocircuitry concentrated on Moses' question.

"The Big ES—Earth Society is my enemy only in the sense that I am an

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Implant starship. It would have stopped me if it could. But you must realize that it would have done so for her own citizens—to adjust their standard of living up a fraction with whatever they could salvage from my hull. It would mean my death as a starship—but a better life for the average Nebish."

"The hive is your enemy—yet you carry us, who are seeds of a new hive?"

"I carry you because you have five toes. I love you. I want to set up colonies—spread mankind among the stars. It is my whole purpose, my reason for existing. I was made by and belong to your kind. The Nebish has evolved into a hive creature—human, perhaps—but I owe him nothing. My existence is not compatible with the hive—so I cannot love the Nebish."

Moses thought silently for a long time. A mechanical intelligence faced with an evolving creator—to whom did she owe homage? Would her function ever end?

He remembered the night sky and another question came into his mind.

Would man ever run out of stars?

DURING the first stages of the voyage the fugitives from the Dundas Harbor Suspension Clinic were screened for skills. Those who had had some Healer experience were put to work by Olga in screening other colonists. Genetic material—lymphocytes from peripheral blood—was sampled. This was embryonated and genetic carbon copies were started. Each colonist found himself with a child, a sort of asexual bud.

After what seemed like a brief period in suspension Olga's charges awoke to find her in orbit around the new planet. Orbit-to-Surface-Modules were being loaded—single-seaters for the outpost sites and larger cabin classes for the settlements.

"This planet will be your new home," said Olga. "It was stocked with Earth biota 392.7 standard years ago. My probes indicate a successful take for most of the Earth species but local alien forms still predominate. You will have to use some judgment, of course—but the probability of a successful Implant is very high."

Moses stood by, watching the loading. He waved at Simple Willie who was going down with one of the settlement groups. Willie had had most of his mental blocks removed by the Healers—enough to remember his coweye sweetheart. He had adjusted well and would probably do all right on the new planet. Several unattached coweyes were in his settlement and Moses felt that Simple Willie's gentle nature would win him a mate easily during the next follicular phase. Willie could use a mate—as could all the males. Each already carried a one- or two-month-old carbon copy child in his arms.

Moses looked down at his own Little Moses, who cried and kicked. Moon walked up carrying Little Moon under his arm like a sack of grain. Little Moon was silent and watched the activity from wide dark eyes.

Moses patted his own noisy infant.

"I don't know why he is crying. He's fed and dry."

Moon frowned and casually picked up Little Moses with his left hand. In a moment the crying infant quieted.

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Moon scolded, "Relax. You have to handle offspring confidently. Parental anxiety means danger to children—any species. If you're nervous your kid's going to be pretty insecure." He added with a wry smile—"If there was one thing you should have learned Outside it was self-confidence."

The bald old man—fossil with child—handed Little Moses back to his bud-parent and walked over to his O.S.M.—a single-seater. He buckled Little Moon into his cradle. Dan ran up.

"Get in," ordered Moon.

The dog turned. A little puppy had been following him all day. Dan didn't know quite what to make of it. He bared his gold teeth. The puppy's tail wagged twice. Two-hundred-year-old memory molecules registered and Dan gave Little Dan such a lick that the little guy tipped over.

Moon growled impatiently and pushed the two dogs in as he closed the hatch.

THE O.S.M. landed softly in a green mountain glade. An alien hawk with bright plumage circled inquisitively. Earth goats nibbled the vegetation and stood unafraid when Moon called.

"By Olga, a Garden of Eden," he breathed. Eyeing a heavy udder and remembering little Moon's needs, he picked up a cup and stalked the nanny. The goat stood calmly while he filled the cup. Moon poured the warm milk into a bottle and gave it to Little Moon.

"How do you explain that?" he muttered as he surveyed the idyllic paradise.

The goats came to him as he spoke.

Unexpectedly a voice called out to him from a stand of trees. Moon glanced back at the O.S.M. Little Moon was still sucking safely.

Old Moon approached the trees cautiously.

"I thought this was supposed to be a one-man outpost—"

He saw a familiar object—a cybernetic javelin embedded in the soft humus and draped with vines. One of Olga's probes had probably been sitting here for centuries talking to the goats, preparing the way.

"I am a companion robot. Designed to be carried. Pick me up," said the cyber.

"I know," said Moon as he pulled it free. "What have you been doing all these years?"

"Making friends for you. Imprint-

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ing the voice of man. Welcome to planet Tiercel – land of the hawks."

"Thanks for the welcome—and the friends you've been making." Moon watched the frisky goats jumping high into the air, gamboling with the two Earth dogs. He said, "Man can always use a few more friends—as long as they are a different species."

THE acromegalic lumbered up to the checkout point.

"Skills?" asked the turnstile.

"Healer. But I've been retired ever since "

He held up his large clumsy hands.

Olga's soothing voice came: "Your pituitary tumor was destroyed in the heating incident at Dundas Harbor. What you can do today, you will be able to do for years. Your condition will not progress. A Healer you are! I would like to assign you to this next settlement with the Tinker from Mount Tabulum. Is that satisfactory?"

The acromegalic glanced over the group loading. They numbered close to two hundred—mixed ages—Dundas and I people. The Tinker stood by one of the cabin doors, nodding and smiling. Under his arm he carried a case of Olga's precision surgical instruments.

The acromegalic joined Tinker's settlement.

Moses remained out of the main waiting area. There were still many thousands to Implant down. He was indecisive. Should he live alone and free—or should he put his efforts behind the struggling settlements and promote civilization? Perhaps hasten the emergence of the Big ES? He recoiled at the idea—yet the sight of a succulent young coweye lured him. Her licorice hair, mint-green eyes and the small mole high on her left cheek attracted him. He could not ignore his sexual imprinting on the cinnamon areola and the golden corpus luteum.

He turned to Olga.

"If we are all the seeds of the Big ES, aren't we just hastening man's end by promoting civilization. Shouldn't we all choose single-seaters?"

"Civilization is good—only the hive is bad."

"But how can I tell where the good aspects of civilization end and the evils of the hive begin?"

"As a species you have perhaps as long as a thousand generations on this planet before the Big ES becomes a possibility. And even then your kind —or the equivalent of what you are today –will be needed."

Moses relaxed.

"A thousand generations? Then a little civilization isn't too bad right now?"

"A little civilization may be necessary for survival—right now."

Moses laughed and picked up Little Moses. He walked to the group being loaded and stood next to the coweye with licorice hair, wondering when her follicular phase was due.

Olga continued the Implanting procedure with love in her circuits. Her humans were a fine species as long as they had something besides themselves to compete with and space was no problem. The planet Tiercel would keep the strain of Moses and Moon noble for many generations. Its ecology was a little more hostile than mother Earth's. ★

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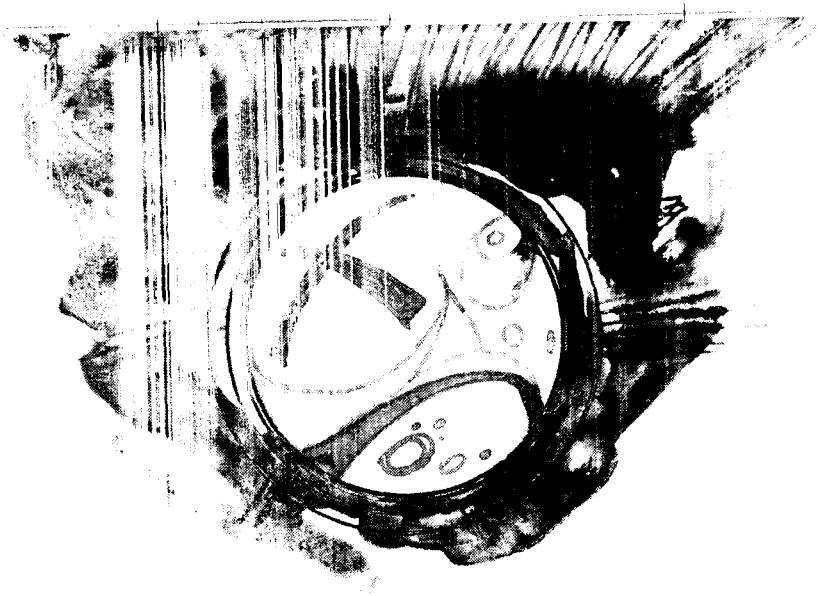

Eternity Calling

It's a lonely universe—especially if you are looking for a soul to mate . . .

JOHN CHAMBERS

CADE stood beside his dark and silent house, his limbs bright with contentment in the yellow mists before dawn. His usual jog through the river before his family awoke had been unexpectedly rewarding. A school of verin recognized too late his presence among them and now six lay in the grass beside the house, still oozing blood from the neat double rows of punctures on the backs of their necks. Another good catch.

Once more Cade rinsed his mouth at the fountain. He was reluctant to admit his squeamishness but he preferred his food cooked. Cade who shared his bed had no such preference and with Cade and Cade of the small beds would fall, ravenous and delighted, upon the verin where they lay.

Just as green began to tinge the

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yellow mists—the ship was there. A black ovoid standing a little taller than Cade and four times that broad, it hung motionless three leaps away, just above the grass. Its side was marked by two stubby white lines, vertical and horizontal, each bisecting the other. Music began to fill the air, a blend of the familiar and the incredibly strange—but altogether pleasant.

Cade told the Cades inside the house to remain asleep. A small port opened halfway along the upper curve of the ship and one by one three golden balls were ejected to dance together on a jet of air. As the morning light increased, Cade could see no blemish in the smooth blackness of the hull, yet somehow it looked as ancient as the headwaters of time. He stood calmly and watched, despite a primitive prickle of fear that wanted him to rasp his backplates together in a shriek of defiance.

Suddenly the quadrant of the ovoid nearest Cade became transparent from pole to pole. Within were massive gleaming boxes connected here and there by large tails and tentacles. to transmit Cade knew not what between them. There was an eeriness in their spacing, as though the creatures who moved among them were horribly misshapen, all height and no length, if such a thing could be imagined.

The ovoid revolved and the next quadrant flashed clear to show closely packed containers that doubtless held stores. A large open volume, invested with strangely configured platforms and fitments, apparently constituted living quarters for a thing or things Cade wished very much not to see.

THE next quadrant resembled the first, except that the boxes were covered with small windows that revealed various markings beneath moving indicators like large flat needles. In an arc around the perimeter were shorter boxes with sloping tops, with more of the small windows and many projections that one could easily imagine being manipulated by hands. Facing the center of the arc was a semi-enclosed platform to support that which moved the projections with whatever it used for hands. Cade wanted badly to rinse his mouth again. The shape of the platform and the constricted space between it and the slope-top boxes confirmed the brutal image of someone with more than three-fourths of his body shorn away.

As the fourth quadrant with its certain cargo of horror swung toward him, Cade barely suppressed the need to terminate existence. This time the blackness of the hull dissolved slowly, rippling through dark gray into a clearing trans-

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lucence that showed a vertical wall dividing the quadrant into two compartments of unequal size. Within the smaller, inexorably growing more distinct, was the vertical, withered body of the thing. Both compartments were lined with the familiar windowed boxes.

Cade struggled to overcome his revulsion, grateful that the music at this point seemed to be helping him to succeed. The creature's skin, gruesomely wrinkled and folded, was silver and pink and blue. Under a head about the size of Cade's the neck diminished to a mere stem, most fragile in appearance. The face of this vertical monster was of course vertical, with two small wet eyes above an arrangement of three holes of unknown purpose. Two more holes, one on each side of the head, were cupped by shells of flesh that suggested hearing organs, therefore the other three openings presumably related in some weird combination to breathing, eating, and speaking—possibly one for each function.

The thing held up two hands that were strangely split and tattered. Cade recognized the gesture and raised two of his hands, disappointed that the alien, which must have at least some intelligence, should as its first act of direct communication issue a challenge to a fight that it couldn't possibly win. He set his feet and rasped his backplates until the air howled with fury.

Wobbling its head violently on its stringy neck, the thing crossed its hands over its body in submission. Cade wondered at its quick surrender, then told himself roughly to be more objective. The thing surely had not sought him out merely to fight. Then what had it meant by the hands-ready sign?

His thoughts raced.

These creatures don't fight as men fight, but with something in their hands. It had made an empty-hands sign of peace, not the hands-ready invitation to grapple. Cade searched the mind and it was as he expected, unknown to Cade. But it was logical, given the fundamental aberrant behavior he had postulated.

Cade crossed his own hands, then held them up again. The thing wobbled its head and raised its hands, its largest face-hole revealing itself to be a mouth as it writhed away from blunted but shining teeth. Cade's backplates chattered briefly and he refused to speculate even in passing on why this being used yet another expression of hostility to show agreement or pleasure or whatever it intended to convey this time.

The creature turned to one of its boxes and moved a small projection with a sliver of maimed hand. The divided-hand configu-

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ration appeared to be efficient for these actions. Operating such closely crowded projections would be clumsy for the solid prehensile slab of a normal hand. Cade wondered whether the modifications were made by special healers like those among the Cades—or by the individual.

Moving with skillful jerks of its two rather rigid legs, the thing perched on a platform near the partition—which Cade saw was transparent—between the two compartments. It stabbed a round red projection with a hand sliver and the outer wall of the larger compartment folded down over the grass to make a ramp. From its platform the thing motioned Cade to a similar platform in the open compartment.

CADE flowed smoothly up the ramp, following a path worn smooth and bright across the *matt'e* surface of the metal, if metal it was. He leaned his left arms comfortably on the platform and looked through the partition. The thing inserted a hand into a small slotted box beside its platform and indicated a similar box beside Cade.

The box was only a little larger than Cade's hand, but he could not touch the sides. He expanded his hand until it was as long as his arm and still he encountered only a tingling void. Slowly he became aware of internal laughter not his.

"You don't have to climb inside," said a voice inside his head. The alien's words were being transmitted and translated through the slotted boxes.

"Right," said Cade.

"You're not afraid?"

"What would be the point?" said Cade. "Couldn't you have held me and brought me in by force?"

"By several methods," said the thing.

"I thought so," said Cade. "It wouldn't make much sense to give your victim an escape option, would it?"

"Not victim. You won't be harmed."

"Good." said Cade." I was beginning to feel like one of those verin out there."

The thing looked.

"You did that?"

"Sure."

"Are you a —" The thing wobbled its head. "No time. So little time even for the important things."

"Right," said Cade. "But listen, do you fight with things in your hands?"

"Things? Yes. A long time ago we did. Why?"

Cade explained. Then, "I searched the mind and we had never heard of it—but I knew it must be so."

"You searched the mind? What mind?" The thing's words came fast.

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"Cade's mind."

"Who's Cade?"

"I am." He pointed to his house, around the horizon. "We all are."

The creature's words formed slowly, as though to avoid tumbling over each other.

"You have a group consciousness, a common mind."

"Partly. But part of each mind is separate. That's the part talking to you now."

With its free hand the alien touseled a thatch of brown grassy fibers on top of its head and Cade realized its silver and blue parts were not skin but coverings of fabric like wall or floor cloths. It wobbled its head. "After all these years. And on a reptilian, chlorine world."

"I know what chlorine is. The other doesn't sound too complimentary," said Cade.

"A zoological classification on Earth. My world. You resemble them."

"Unintelligent, no doubt. 'After all these years' of what? To me a year is a cycle around both suns. I suppose yours isn't the same length—but no matter."

"One sun, in our case. I left my world more than twenty years ago by the ship's clock, to follow the cross. I travel at many times the speed of light. Do you understand what's happened on my world?"

CADE thought for a moment. "Depending on how many ship's years you've spent in motion, many thousand years may have passed on your world since you left." He looked at his house, at the distant line of trees that marked his river. "What's the cross?"

"The white marking on the ship. This." The alien lifted and let fall a silver cross hanging from a chain that circled its neck. "The symbol of our cause."

"Does it have a meaning? Other than the symbol of your—ah—cause?"

"I think not. I'd probably have heard if it did. Now. I'm taking far too long here—but yours is the

FORECAST

THE SHAKER REVIVAL by Gerald Jonas

"Our strength is not of this world, Dad. If you want to get the real picture just imagine us—all your precious little gene-machines—standing around in a circle, our heads bowed in prayer, holding our breaths and clicking off one by one. A beautiful way for your world to end? Not with a bang or a whimper—but with one long breathless Amen!"

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first communal mind I've found and I'd like you to store the facts of our cause. Will you? For future generations?"

"Maybe," said Cade. "How many alien races have you found?"

"Two hundred and seventy three. You're two seventy-four. Please stop interrupting. I really must rush. Do you know about life after death? Eternal life?"

"Life after—isn't that a contradiction?"

"Oh, no. Not at all. Not physical life—but life of the soul."

"Soul. Like Cade's common mind?"

"I'm not sure. If you have a soul it's probably in the part that's not common with the rest of Cade."

"Oh."

"Let's get on. You can imagine from this ship, this translator, how capable my world is, technology wise. How rich. I think you can visualize that pretty well."

"Yes."

"Well, for many years on my world souls—their existence, if you will—had to be taken on faith."

"Faith."

"Yes. Like there's no evidence but you're sure of it anyway sort of thing."

"I'm sure of it?" asked Cade.

"Well, if you couldn't know for sure but you were certain of it, that would be a faith sort of thing. Now wait a minute. Just let me get to the point, if you please. The point is, nobody has to fool around with faith any more. I think you'll agree that's all to the good."

"Right." We've scientifically identified the elements of the soul. That machine right there beside you, the blue one, can tell me in five seconds whether you have a soul."

"Why do you want to know?"

"For one thing, so I'll know whether it's been redeemed. If the white light comes on and stays on, you've got a soul that's been redeemed. If it flashes, your soul needs redeeming. Red light, no soul at all."

"What's that—redeemed?"

"Well, it's—look at it this way—listen, you scaly—. My friend, it's all on a scientific basis. Just accept it, will you please?" The alien's face had been turning pinker as he spoke, although his tones had little apparent connection with the bright hues of tranquillity. "If the blue machine says you have a soul that needs redeeming—the white machine alongside does the job and automatically cross-checks for accuracy and completeness. All completely scientific and unarguable."

"But if I had a soul wouldn't I know if it needed redeeming?"

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"Oh, no. Not at all. There could have been some redeemer through here centuries ago—maybe even while they were still redeeming manually."

"That was the old way?"

"Of course. Just because we've put this on a scientific basis doesn't mean it's something new. There's absolutely no conflict between science and religion."

"Religion?"

"This whole bag, redeeming and like that."

"Is saving in addition to redeeming—or instead of?"

"Oh, my word. In addition to, and after, as well. No need to fool around trying to save a soul that hasn't been redeemed. Complete waste of time."

"I see."

"Now it would take an hour to cover the whole field of religious philosophy, and I don't have an hour to spare, of course."

"Of course."

"But I want to fill you in a little more. The pink machine there tells me whether your soul is saved. If not, the gold machine saves it, twice, as a matter of fact, for double assurance, then cross-checks twice. Beautiful?"

"Beautiful. And you spend your life doing this. How many more like you?"

"Maybe hundreds. Maybe just me. I've been away a long time."

"What's the point?"

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"WELL, it's a lonely universe. We think that to interbreed with new people with souls would be—well—new blood, you know. Sharing the joys of eternal life. Are you bisexual?"

"Uh, no, not personally. But you must mean the race. It is."

"So is ours. And so am I."

"Congratulations. I guess. Is it very common with you creatures?"

"All of us that follow the cross. By surgical intervention." It turned red. "I can either plant seed in fertile soil or carry new seed back to earth. All in the name of the cause, of course."

"Of course. I guess we wouldn't be—uh—compatible, even chemically," said Cade, feeling considerable relief. "Shall we get on with the test?"

"Put your other—another hand in the blue machine's slot," said the thing.

Cade did and the red light glowed.

The thing breathed deeply.

"Well, you can't win all the time."

"No," said Cade. "How many races have you found with souls?"

The thing's voice was weak.

"None."

"Pity. It really must be lonely, the only beings in the universe with souls."

The alien's head tumbled forward sickeningly on its weak neck. Then it looked at Cade and its voice was urgent inside his head.

"We don't have souls. And we must find them. Find souls and eternal life." Its wet eyes became wetter and a clear fluid spilled down the hideous flat face.

"Please store us in Cade's memory. We'll make you rich beyond your wildest imagination if you help us find a race that can mix with us and bring us life everlasting. We'll make the other world rich, too. Rich beyond belief."

It stabbed a green projection and a small black box tumbled past Cade, down the ramp to the grass. "That's a perpetually powered combination prayer wheel and relay beacon. To call us if you find a prospect. Graphic instructions on the side. You *will* put us in your memory? Remember, rich beyond belief."

"Yes," said Cade, lying for the first time in a long life that had been rich beyond belief.

He withdrew his hand from the slotted box and moved down the ramp. The hull whispered shut and the ship was no longer there.

Cade slid the beacon out of sight behind a bush and called his family. The verin were beginning to smell. He rinsed his mouth at the fountain.

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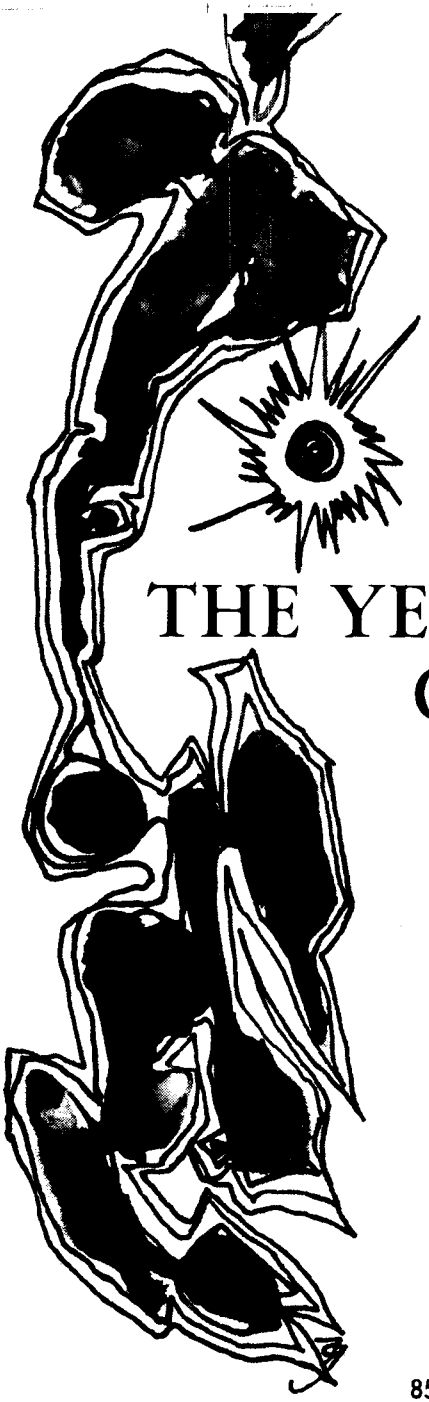

DANNIE PLACHTA
AND
ROGER ZELAZNY

"Of course, if we were to pray directly above the city of the enemy it would cease to exist . . ."

THE YEAR OF THE GOOD SEED

IT WAS the Year of the Good Seed.

When Captain Planter came down out of the gleam-ridden night sky in his needle of power, red thread of fires hanging from its back, his aide and physicist were at his side. Machineries were at his hand, histories in his head and he came down into the Year of the Good Seed.

It was a time of celebration, of rejoicing. It was a time for the sowing of peace, happiness and hope.

It was a time of worship.

Captain Planter stood upon a hillside beneath the sky of morning and regarded the city.

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Staring down across the frost-gripped grasses, mists waving above them, he looked upon the spires and blocks and domes of the city, dappled by the yellow sunrise, threaded with the darker curves and lines of shadowed streets. He saw, though, only a part of it from that high vantage, because it was one of the larger cities of the world. From above, however, coming down through the night, it had looked like a two-thousand-year birthday cake for civilization, which perhaps it was, with its candles all a-flicker.

"They must have spotted us," said Condem, his aide. "Be here soon."

"Yes," said the captain.

"Human, they'll be," said Condem, "if Anthro's right."

"It would seem so," said Planter, lowering his glasses. "Looks enough like an Earth city—"

"Could they be the cause of it, I wonder?"

"Possibly," said the captain.

"Strange."

"Perhaps."

Beneath the sky of afternoon, the yellow sun high in the springing of the year, they met with the people of the city and established communications. They met with the people of its government and with the people of the big government of which its government was a part. They met with the people of its religion, of which the big government was a part. They were all people-people—that is to say, of human appearance.

There was an air of festivity about them as they moved through the senates and the temples, the mansions and the military bases, the conferences and the broadcasting rooms, down the streets and up the stairs, through the laboratories, back to the temples.

This was because it was the Year of the Good Seed.

THE captain and his aides had to answer many questions before they could ask any of their own.

Before they could answer all the many questions they were asked the dusk-fires began.

This was upon the seventh day and Yanying, the physicist, looked into the sunset with eyes that always squinted and said. "It has begun."

Planter moved to the window of the suite they had been given—within the temple, within the city.

He stared upon an aurora borealis which pierced the eye and shattered the mind with its brilliance, its colors.

"My God." he said.

"The whole sky's a cockeyed rainbow," said Condem, moving to his side.

"The explosions are closer than we thought," said Yanying, "if the Allen Bottle can trap that much. It must be that they are

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originating from here—from the planet, not the sun."

"Well, why then? Testing? That doesn't seem to be the answer, because the thing follows a definite cycle. This is right on time."

"Natural phenomena," said the physicist, "are not the only happenings that follow definite cycles."

"A moratorium followed by a holocaust, followed by another moratorium, followed by— It doesn't make sense."

"They might look like us," said Condem, "but that doesn't mean what's inside's the same. For a while we did speculate that this thing might be a local Armageddon. But there's nothing wrong here. No signs of nuclear war, or the rebuilding that follows after. Nothing. There's been nothing like that at all, from everything they've said, from everything we've seen."

"From all that's been shown us," corrected Planter. "I wonder—"

"What?" asked Yanying.

"Is someone, something, dying somewhere?"

"Something is always dying somewhere," said Yanying. "The question is one of quantity and quality—and where."

"They might look like us—" said Condem.

A knock came upon their door.

The captain opened it to admit Laren, high priest of the center temple of the city.

Laren was several inches shorter and several pounds heavier than any of them. His thinning hair was brushed to cover over a spreading bald spot. Neatly tailored tweed robes covered the rest of him, shoulder to knee and a smile which might have betokened senility or orgasm opened his wide face.

"Sirs," he said, "it has begun. I came to ask whether you would join us in the worship of the Creator of the universe. I see, however, that you already have."

"Worship?" asked Planter.

"Your friends look upon the first outward signs of the season within the heavens."

"The lights? The aurora? You're doing that?"

"Of course," said Laren, "to worship Him as He is, with a sacrifice of pure power upon the altar of the sky."

"Those are nuclear explosions you're setting off—in outer space—aren't they?"

"Yes. For has He not always, does He not now and will He not forever so manifest Himself within the eternal cycle of the sun? Is He not the force that separates atom from atom, so that the power is freed to flow like rivers of benediction through the universe of His glory?"

"I suppose so," said Planter. "I never thought of it quite that way

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before. It is the reason we are here, however."

"To behold our way of worship?"

"Well, yes. Actually—now that I think of it—yes. Your sacrifices of pure power upon the altar of the sky have been detected beyond your solar system. They come at such regular intervals—about half a generation apart—that at first it was guessed that something unique was happening to your sun. It is rather strange to discover they are—prayers."

"What else could they be?" asked Laren.

"If not disturbances within your sun, then perhaps signs of war upon your planet."

"War? Yes, we have war. And the unrest which follows and precedes war. More of this than actual war. This is always with us. You see, there is another power, upon the other continent . . . But I do not see how the celebration of the Year of the Good Seed could be mistaken for such."

"Year of the Good Seed?" asked Yinyang. "What is that?"

"IT IS the year for the planting of new, good things—things that will take root and grow through the cycle of years that is to follow. By the Year of a Thousand Flowers this time's promise will be fulfilled."

"I begin to understand," said Yinyang, turning to the Captain. "It sounds similar to the cycle of years celebrated in many Asian countries. There is the Year of the Rat, the Year of the Ox, the Year of the Tiger, the Year of the Hare," he said, "then those of the Dragon, the Serpent, the Horse, the Goat, the Monkey, the Rooster, the Dog and the Pig. The procession is based on the old astrology—and every astrological system is, ultimately, the representation of a solar myth. Theirs seems to be derived from an agricultural phase of their society—the effect of the sun upon growing things. The symbolism has been maintained by their religion and it would seem that they, too, celebrate the times by fireworks displays. They use the greatest explosive force at their command."

"It is just as you have said," Laren agreed.

"That's all they use it for?" said Planter.

"I would not be surprised if that were the case. After all, the Chinese discovered gunpowder and the only thing they used it for was firecrackers. It took a European mind to put it to such a useful end as blowing up one's fellows."

"Excuse me—but I do not follow the conversation," said Laren. "If this thing 'gunpowder' was like prayers and it was also used to destroy other men, does this mean . . .? I do not understand!"

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"It is just as well," said Yinyang.

"It is probably true, though," Laren continued, "that if we were to pray directly above a city of the enemy it would cease to exist. But this would be blasphemous. No one would do such a thing."

"Of course not," said Planter.

Laren turned toward the window and stared at the prayer-streaked sky.

Then, after a time: "Have such things ever been committed?"

"Perhaps," said Planter. "Long ago and in some far place."

"The will of the Creator is that the just triumph," Laren said. "If the ones who may have done this thing were the righteous, such as ourselves, then it may not have been blasphemy but a furtherance of His will."

"The doings of ignorant men in other places need not concern you," said Yinyang.

"That is true," he replied.

"So let it be forgotten," said Planter.

"Yes, of course."

Together they watched the opening of the Year of the Good Seed.

IT WAS not much later, while still moving at a -C velocity, that rivers of light flowed about Captain Planter's vessel. When Condem informed him that the nature of the detonations was unique for the area in that the light appeared to have been filtered through an atmosphere on this occasion, the Captain duly entered the observation in his log. ★

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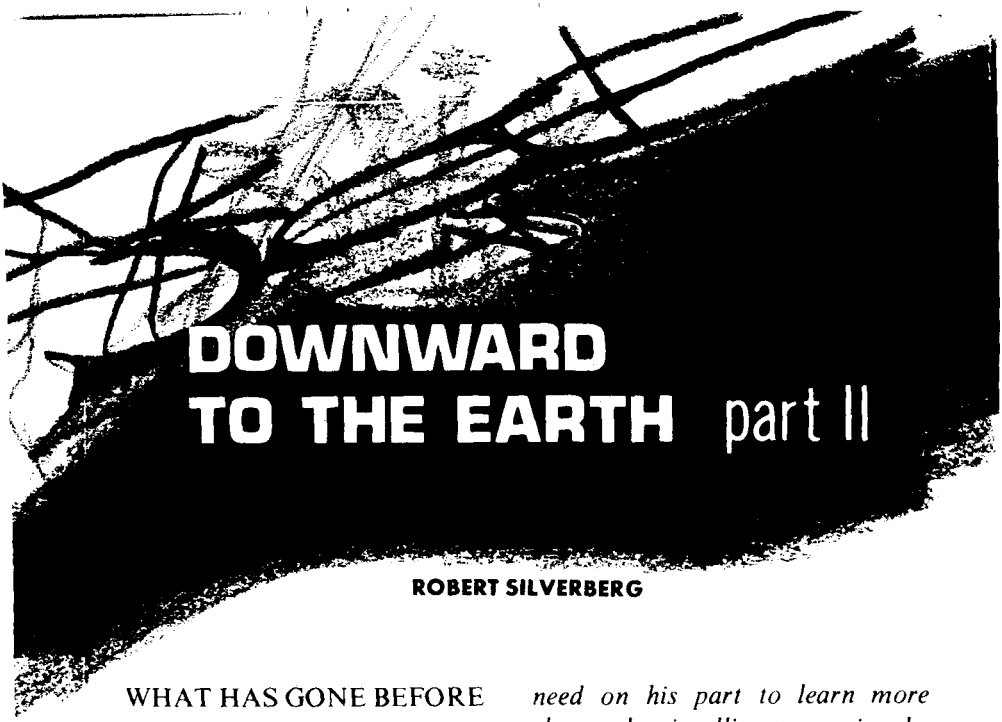

DOWNWARD TO THE EARTH part II

ROBERT SILVERBERG

WHAT HAS GONE BEFORE

EDMUND GUNDERSEN, former sector chief on Holman's World, an Earth colony, returns to the planet as little more than a tourist after Earth has returned it to the control of its indigenes, an intelligent, elephantine life form, the nildoror. The planet is now known by its native name of Belzagor.

Other changes have taken place, some subtle, others not. Left over traces of Man's occupation of the planet—buildings, a robot-crewed spaceport—are gradually falling into disrepair. The nildoror have resumed their lives and customs as if they had never been—sometimes savagely—interrupted by Man. Gunderson's return has been dictated by an inner need on his part to learn more about the intelligent species he once treated and abused as animals.

The nildoror understand and sympathize and one of them, Srin'gahar, agrees to carry Gundersen to the nearest nildor encampment, where he can apply for a travel permit.

At the encampment Gunderson meets Vol'himyor, an ancient, many-born nildor, requests permission to go to the nildoror place of rebirth, the mist country. He is invited to spend some time with his hosts before permission is granted—and that night finds himself joining them in an elemental, ritualistic dance.

He is shocked to discover that in so doing is able to share himself completely with the nildoror, in effect becoming one of them.

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VI

HE AWOKE some time after midday. The only sign of last night's frenzy was in the spongy turf near the lakeshore, which was terribly scuffed and torn.

Gundersen felt stiff and numb. Also he was abashed. He knew the embarrassment of one who has thrown himself too eagerly into someone else's special amusement. He could hardly believe that he had done what he knew himself to have done. In his shame he felt an immediate impulse to leave the encampment at once, before the nildoror could show him their contempt for an Earthman capable of making himself a thrall to their festivity. But he shackled the thought, remembering that he had a purpose in coming here.

He limped down to the lake and waded out until its water came up to his breast. He soaked a while and washed away the sweat of the night before. Then fastidiously, he went to a different part of the lake and drank deeply. Emerging, he found his clothing and put it on.

A nildor came to him and said, "Vol'himyor will speak to you now."

The many-born one was halfway up the slope. Gundersen could not find the words of any of the greetings formulae. He simply stared raggedly at the old nildor.

Vol'himyor said, "You dance well, my once-born friend. You dance with joy. You dance with love. You dance like a nildor, do you know that?"

"It is not easy for me to understand what happened to me last night," said Gundersen.

"You proved to us that our world has captured your spirit."

"Was it offensive to you that an Earthman danced among you?"

"If it had been offensive," said Vol'himyor slowly, "you would not have danced among us." There was a long silence. Then the nildor said, "We will make a treaty, we two. I will give you permission to go into the mist country. Stay there until you are ready to come out. But when you return bring with you the Earthman known as Cullen and offer him to the northernmost encampment of nildoror, the first of my people that you find. Is this agreed?"

"Cullen?" Gunderson asked. Across his mind flared the image of a short broad-faced man with fine golden hair and mild green eyes. "Cedric Cullen, who was here when I was here?"

"The same man."

"He worked with me when I was at the station in the Sea of Dust."

"He lives now in the mist country," Vol'himyor said, "having gone there without permission. We want him."

"What has he done?"

"He is guilty of a grave crime. Now he has taken sanctuary among the sulidoror, where we are unable to gain access to him. It would be a violation of our covenant with them if we removed this man ourselves. But we may ask you to do it."

"You won't tell me the nature of his crime?"

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"Does it matter? We want him. Our reasons are not trifling ones. We request you to bring him to us."

"You're asking one Earthman to seize another and turn him in for punishment," said Gundersen. "How am I to know where justice lies in this affair?"

"Under the treaty of relinquishment—are we not the arbiters of justice on this world?"

Gundersen admitted that this was so.

"Then we hold the right to deal with Cullen as he deserves," Vol'himyor said.

That did not, of course, make it proper for Gundersen to act as catspaw in handing his old comrade over to the nildoror. But Vol'himyor's implied threat was clear—do as we wish, or we grant you no favors.

Gundersen said, "What punishment will Cullen get if he falls into your custody?"

"Punishment? Punishment? Who speaks of punishment?"

"If the man's a criminal—"

"We wish to purify him," said the many-born one. "We desire to cleanse his spirit. We do not regard the process as punishment."

"Will you injure him physically in any way?"

"It is not to be thought."

"Will you end his life?"

"Can you mean such a thing? Of course not."

"Will you imprison him?"

"We will keep him in custody," Vol'himyor, "for however long the rite of purification takes. I do not think it will be long. He will swiftly be freed and he will be grateful to us."

Gundersen considered all aspects of the matter. Shortly he said, "I agree to our treaty, many-born one, but only if I may add several clauses before concluding."

"Go on."

"If Cullen will not tell me the nature of his crime I am released from my obligation to hand him over."

"Agreed."

I am also released from my obligation if the sulidoror object to my taking Cullen out of the mist country."

"They will not object. But agreed."

"If Cullen must be subdued by violence in order to bring him forth—I am released."

The nildor hesitated a moment.

"Agreed," he said finally.

"I have no other conditions to add."

"Then our treaty is made," Vol'himyor said. "You may begin your northward journey today. Five of our once-born ones must also travel to the mist country for their time of rebirth has come. They will accompany you and safeguard you along the way if you wish. Among them is Srin'gahar, whom you already know."

"Will it be troublesome for them to have me with them?"

"Srin'gahar has particularly requested the privilege of serving as your guardian," said Vol'himyor.

A senior nildor summoned Srin'gahar and the four others who would be going toward rebirth.

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Gundersen was gratified at this confirmation of the existing data: once more the frenzied dance of the nildoror had preceded the departure of a group bound for rebirth.

SRIN'GAHAR and Gundersen went aside to plan their route.

"Where in the mist country do you intend to go?" the nildor asked.

"It does not matter. I just want to enter it. I suppose I'll have to go wherever Cullen is."

"Yes. But we do not know exactly where he is. We will have to wait until we are there to learn it. Do you have special places to visit on the way north?"

"I want to stop at the Earthman stations," Gundersen said. "Particularly at Shangri-la Falls. So my idea is that we'll follow Madden's River northwestward and—"

"These names are unknown to me."

"Sorry. I guess they've all reverted now to nildororu names and I don't know those. But wait—" Gundersen scratched a hasty but serviceable map of Belzagor's western hemisphere in the mud. Across the waist of the disk he drew the thick swath of the tropics. At the right side he gouged out a curving bite to indicate the ocean. On the left he outlined the Sea of Dust. Above and below the band of the tropics he drew thinner lines representing the northern and southern mist zones. Beyond them he indicated the gigantic icecaps. He marked the spaceport and the hotel at the coast with an X and cut a wiggly line up from there, clear across the tropics into the northern mist country, to show Madden's River. At the midway point of the river he placed a dot to mark Shangri-la Falls. "Now," said Gundersen, "if you follow the tip of my stick—"

"What are those marks on the ground?" asked Srin'gahar.

A map of your planet, Gundersen wanted to say. But there was no nildororu word in his mind for "image," "picture" and similar concepts.

He said lamely, "This is your world. This is Belzagor—or at least half of it. See, this is the ocean. The sun rises here and—"

"How can this be my world—these marks—when my world is so large?"

"This is like your world. Each of these lines, here, stands for a place on your world. You see, here, the big river that runs out of the mist country and comes down to the coast, where the hotel is, yes? And this mark is the spaceport. These two lines are the top and the bottom of the northern mist country. The—"

"It takes a strong sulidor a march of many days to cross the northern mist country," said Srin'gahar. "I do not understand how you can point to such a small space and tell me it is the northern mist country. Forgive me, friend of my journey. I am very stupid."

Gundersen tried again, attempt-

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ing to communicate the nature of the marks on the ground. But Srin'gahar simply could not comprehend the idea of a map, nor could he see how scratched lines could represent places. The map was a metaphor of place, an abstraction from reality. Evidently even beings possessing *G'rakh* might not have the capacity to grasp such abstractions.

He apologized to Srin'gahar for his own inability to express concepts clearly and rubbed out the map with his boot. Without it, planning the route was somewhat more difficult but they found ways to communicate. Gundersen learned that the great river at whose mouth the hotel was situated was called the Seran'nee in nildororu. The place where the river plunged out of the mountains into the coastal plain, which Earthmen knew as Shangri-la Fall, was Du'jayukh to nildoror. Then it was simple for them to agree to follow the Seran'nee to its source, with a stop at Du'jayukh and at any other settlement of Earthmen that happened to lie conveniently on the path north.

While this was being decided, several of the sulidoror brought a late breakfast of fruit and lake fish to Gundersen, exactly as though they recognized his authority under the Company. It was a curiously anachronistic gesture, almost servile, not at all like the way they had tossed him a raw slab of malidar meat the day before. Then they had been testing him, even taunting him. Now they were waiting upon him.

THE journey began in late afternoon. Five nildoror moved in single file, Srin'gahar at the back of the group with Gundersen perched on his back; the Earthman did not appear to be the slightest burden for him. Their path led due north along the rim of the great rift. The mountains that guarded the central plateau rose on the left. By the light of the sinking sun Gundersen stared toward that plateau. Down here in the valley his surroundings had a certain familiarity—he might almost be in some steamy jungle of South America. But the plateau appeared truly alien. Gundersen eyed the thick tangles of spiky purplish moss that festooned and nearly choked the trees along the top of the rift wall. The way the parasitic growth drowned its hosts the trees seemed grisly to him. The wall itself, of some soapy gray-green rock, dotted with angry blotches of crimson lichen and punctuated every few hundred meters by long ropy strands of a swollen blue fungus, cried out its otherworldliness—the soft mineral had never felt the impact of raindrops but had been gently carved and shaped by the humidity alone, taking on weird knobbinesses and hollows over the millennia. Nowhere on Earth could one see a rock wall like that, serpentine and involute and greasy.

The forest beyond the wall looked impenetrable and vaguely sinister. The silence, the heavy and sluggish air, the sense of dark strangeness, the flexible limbs of the glossy trees bowed almost to

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the ground by moss, the occasional distant snort of some giant beast, made the central plateau forbidding and hostile. Few Earthmen had ever entered it and it had never been surveyed in detail.

Gundersen had been in the plateau country only once, by accident, when his pilot had had to make a forced landing en route from coastal headquarters to the Sea of Dust. Seena had been with him. They spent a night and a day in that forest, Seena terrified from the moment of landing, Gundersen comforting her in a standard manly way but finding that her terror was somehow contagious. The girl trembled as one alien happening after another presented itself and shortly Gundersen was on the verge of trembling too.

They watched, fascinated and repelled, while an army of innumerable insects with iridescent hexagonal bodies and long hairy legs strode with maniacal persistence into a sprawling glade of tigermoss—for hours the savage mouths of the carnivorous plants bit the shining insects into pieces and devoured them and still the horde marched on to destruction. At last the moss was so glutted that it went into sporulation, puffing up cancerously and sending milky clouds of reproductive bodies spewing into the air. By morning the whole field of moss lay deflated and helpless. Tiny green reptiles with broad rasping tongues moved in to devour every strand, laying bare the soil for a new generation of flora. And then there were the feathery, jellylike things, streaked with blue and red, that hung in billowing cascades from the tallest trees, trapping unwary flying creatures. And bulky rough-skinned beasts as big as rhinos, bearing mazes of blue antlers with interlocking tines, grubbed for roots a dozen meters from their camp, glaring sourly at the strangers from Earth. And long-necked browsers with eyes like beacons munched on high leaves, squirting barrelsful of purple urine from openings at the bases of their throats. And dark otterlike beings ran chattering past the stranded Earthmen, stealing anything within quick grasp. Other animals visited them also. This planet, which had never known the hunter's hand, abounded in big mammals.

"Have you ever been in there?" Gundersen asked Srin'gahar, as night began to conceal the rift wall.

"Never. My people seldom enter that land."

"Occasionally, flying low over the plateau, I used to see nildoror encampments in it. Not often, but sometimes. Do you mean that your people no longer go there?"

"No," said Srin'gahar. "A few of us have need to go to the plateau but most do not. Sometimes the soul grows stale and one must change one's surroundings. If one is not ready for rebirth one goes to the plateau. It is easier to confront one's own soul in there. Can you understand what I say?"

"I think so," Gundersen said. "It's like a place of pilgrimage, then—a place of purification?"

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"In a way."

"But why have the nildoror never settled permanently up there? There's plenty of food. The climate is warm—"

"It is not a place where *G'rakh* rules," the nildor replied.

"Is it dangerous to nildoror? Wild animals, poisonous plants, anything like that?"

"No, I would not say that. We have no fear of the plateau, and there is no place on this world that is dangerous to us. But the plateau does not interest us, except those who have the special need of which I spoke. As I say, *G'rakh* is foreign to it. Why should we go there? There is room enough for us in the lowlands."

The plateau is too alien even for them, Gundersen thought. They prefer their nice little jungle.

He was not sorry when darkness hid the plateau from view.

THEY made camp that night beside a hissing-hot stream. Evidently its waters issued from one of the underground cauldrons common in this sector of the continent. Srin'gahar said that the source lay not far to the north. Clouds of steam rose from the swift flow. The water, pink with high-temperature microorganisms, bubbled and boiled.

He scrubbed his face, taking extraordinary pleasure in the art, and supplemented a dinner of food capsules and fresh fruit with a stew of greenberry roots—delectable when boiled, poisonous otherwise. For shelter while sleeping Gundersen used a monomolecular jungle blanket that he had stowed in his backpack, his one meager article of luggage on this journey. He draped the blanket over a tripod of boughs to keep away nightflies and other noxious insects and crawled under it. The ground, thickly grassed, was a good enough mattress for him.

Srin'gahar settled down protectively a short distance from Gundersen and wished him a good sleep.

Gundersen said, "Do you mind talking a while? I want to know something about the process of rebirth. How do you know, for instance, that your time is upon you? Is it something you feel within yourself, or is it just a matter of reaching a certain age? Do you—"

He became aware that Srin'gahar was paying no attention. The nildor had fallen into what might have been a deep trance and lay perfectly still.

Shrugging, Gundersen rolled over and waited for sleep. But sleep was a long time coming.

He thought a good deal about the terms under which he had been permitted to make this northward journey. Perhaps another many-born one would have allowed him to go into the mist country without attaching the condition that he bring back Cedric Cullen. Or perhaps he would not have been granted safe-conduct at all. Gundersen suspected that the results would have been the same no matter which encampment of nildoror he had happened to go to for his travel permission. Though

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the nildoror had no means of long-distance communication, no governmental structure in any Earthly sense, no more coherence as a race than a population of jungle beasts, they nevertheless were remarkably well able to keep in touch with one another and to strike common policies.

What was it that Cullen had done, Gundersen wondered, to make him so eagerly sought?

In the old days Cullen had seemed overwhelmingly normal—a cheerful, amiable, ruddy man who collected insects, spoke no harsh words and held his liquor well. When Gundersen had been the chief agent out at Fire Point in the Sea of Dust, a dozen years before, Cullen had been his assistant. Months on end there were only the two of them in the place and Gundersen had come to know the other man quite well, he imagined.

Cullen had had no plans for

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making a career with the Company. He had signed a six-year contract, would not renew. He had intended to take up a university appointment when he had done his time on Holman's World. He had come here only for seasoning and for the prestige that accured to anyone who had a record of outworld service. But then the political situation on Earth had grown complex and the Company had been forced to agree to relinquish a great many planets that it had colonized. Gundersen, like most of the fifteen thousand Company people here, had accepted a transfer to another assignment. Cullen, to Gundersen's amazement, had been among the handful who had opted to stay, even though that meant severing his ties with the home world. Gundersen had not asked him why. One did not discuss such things. But Cullen's choice had seemed odd.

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He saw Cullen clearly in memory, chasing bugs through the Sea of Dust, killing bottle jouncing against his hip as he ran from one rock outcropping to the next—an overgrown boy, really. The beauty of the Sea of Dust was altogether lost on him. No sector of the planet was more truly alien, nor more spectacular—a dry oceanbed, greater in size than the Altantic, coated with a thick layer of fine crystalline mineral fragments as bright as mirrors when the sun was on them. From the station at Fire Point one could see the morning light advancing out of the east like a river of flame, spilling forth until the whole desert blazed. The crystals swallowed energy all day and gave it forth all night, so that even at twilight the eerie radiance rose brightly and after dark a throbbing purplish glow lingered for hours. In this almost lifeless but wondrously beautiful desert the Company had mined a dozen precious metals and thirty precious and semi-precious stones. The mining machines set forth from the station on far-ranging rounds, grinding up loveliness and returning with treasure—there was not much for an agent to do there except keep inventory of the mounting wealth and play host to the tourist parties that came to see the splendor of the countryside.

Gundersen had grown terribly bored and even the glories of the scenery had become tiresome to him. But Cullen, to whom the incandescent desert was merely a flashy nuisance, fell back on his hobby for entertainment and filled bottle after bottle with his insects. Were the mining machines still standing in the Sea of Dust, Gundersen wondered, waiting for the command to resume operation? If the Company had not taken them away after relinquishment they would surely stand there throughout all eternity, unrusting, useless, amid the hideous gouges they had cut. The machines had scooped down through the crystalline layer to the dull basalt below. They had spewed out vast heaps of tailings and debris as they gnawed for wealth. Probably the Company had left the things behind as monuments to commerce. Machinery was cheap. Interstellar transport was costly, why bother removing them?

"In another thousand years," Gundersen once had said, "the Sea of Dust will all be destroyed and there'll be nothing but rubble here if these machines continue to chew up the rock at the present rate."

Cullen had shrugged and smiled.

"Well, one won't need to wear these dark glasses once the infernal glare is gone," he had said.

Now the rape of the desert was over, the machines were still and Cullen was a fugitive in the mist country, wanted for some crime so terrible the nildoror would not even give it a name.

VII

WHEN they took to the road in the morning it was Srin'-

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gahar, uncharacteristically, who opened the conversation.

"Tell me of elephants, friend of my journey. What do they look like and how do they live?"

"Where did you hear of elephants?"

"The Earthpeople at the hotel spoke of them. And also in the past I have heard the word said. They are beings of Earth that look like nildoror, are they not?"

"There is a certain resemblance," Gundersen conceded.

"A close one?"

"There are many similarities." He wished Srin'gahar were able to comprehend a sketch. "They are long and high in the body, like you, and they have four legs, tails, trunks. They have tusks, but only two—one here, one here. Their eyes are smaller and placed in a poor position, here, here. And here—" he indicated Srin'gahar's skull-crest— "they have nothing. Also, their bones do not move as yours do."

"It sounds to me," said Srin'gahar, "as though these elephants look very much like nildoror."

"I suppose they do."

"Why is this, can you say? Do you believe that we and the elephants can be of the same race?"

"It isn't possible," said Gundersen. "It's simply a—a—" He groped for words. The nildoror vocabulary did not include the technical terms of genetrics. "Simply a pattern in the development of life that occurs on many worlds. Certain basic designs of living creatures recur everywhere. The elephant design—the nildoror design—is one of them. The large body, the huge head, the short neck, the long trunk enabling the being to pick up objects and handle them without having to bend —these things will develop wherever the proper conditions are found."

"You have seen elephants, then, on many other worlds?"

"On some," Gundersen said. "Following the same general pattern of construction. Or at least some aspects of it, although the closest resemblance of all is between elephants and nildoror. I could tell you of a half-dozen other creatures that seem to belong to the same group. And this is also true of many other life-forms—insects, reptiles, small mammals and so on. There are certain niches to be filled on every world. The thoughts of the Shaping Force travel the same path everywhere."

"Where, then, are Belzagor's equivalents of men?"

Gundersen faltered. "I didn't say that there were exact equivalents everywhere. The closest thing to the human pattern on your planet, I guess, is the sulidoror. And they aren't very close."

"On Earth, the men rule. Here the sulidoror are the secondary race."

"An accident of development. Your *G'rakh* is superior to that of the sulidoror—on our world we have no species other than man that possess *G'rakh* at all. But the physical resemblances between men and sulidoror are many. They walk on two legs—

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so do we. They eat both flesh and fruit—so do we. They have hands which can grasp things—so do we. Their eyes are in front of their heads—so are ours. I know, they're bigger, stronger, hairier, and less intelligent than human beings. I'm trying to show you how patterns can be similar on different planets, even though there's no real blood relationship between—"

Srin'gahar said quietly, "How do you know that elephants are without *G'rakh*?"

"We—they—it's clear—" Gundersen stopped, uneasy. After a pause he said carefully, "They've never demonstrated any of the qualities of *G'rakh*. They have no village life, no tribal structure, no technology, no religion, no continuing culture.

"We have no village life and no technology," the nildor said. "We wander through the jungles, stuffing ourselves with leaves and branches. I have heard this said of us—and it is true."

"But you're different. You—"

"How are we different? Elephants also wander through jungles, stuffing themselves with leaves and branches, do they not? They wear no skins over their own skins. They make no machines. They have no books. Yet you admit that we have *G'rakh* and you insist that they do not."

"They can't communicate ideas," said Gundersen desperately. "They can tell each other simple things, I guess, about food and mating and danger, but that's all. If they have a true language we can't detect it. We're aware of only a few basic sounds."

"Perhaps their language is so complex that you are unable to detect it," Srin'gahar suggested.

"I doubt that. We were able to tell as soon as we got here that the nildoror speak a language; and we were able to learn it. But in all the thousands of years that men and elephants have been sharing the same planet, we've never been able to see a sign that they can gather and transmit abstract concepts. And that's the essence of having G'rakh, isn't it?"

"I repeat my statement. What if you are so inferior to your elephants that you cannot comprehend their true depths?"

"A cleverly put point, Srin'gahar. But I won't accept it as any sort of description of the real world. If elephants have *G'rakh*, why haven't they managed to get anywhere in their whole time on Earth? Why does mankind dominate the planet—with the elephants crowded into a couple of small corners and practically wiped out?"

"You kill your elephants?"

"Not any more. But there was a time when men killed elephants for pleasure, or for food, or to use their tusks for ornaments. And there was a time when men used elephants for beasts of burden. If the elephants had *G'rakh*, they—"

He realized that he had fallen into Srin'gahar's trap.

THE nildor said, "On this planet, too, the 'elephants' let themselves be exploited by man-

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kind. You did not eat us and you rarely killed us but often you made us work for you. And yet you admit we are beings of *G'rakh*."

"What we did here," said Gundersen, "was a gigantic mistake. And when we came to realize it we relinquished your world and got off it. But that still doesn't mean that elephants are rational and sentient beings. They're animals, Srin'gahar, big simple animals and nothing more."

"Cities and machines are not the only achievements of *G'rakh*."

"Where are their spiritual achievements, then? What does an elephant believe about the nature of the universe? What does he think about the Shaping Force? How does he regard his own place in his society?"

"I do not know," said Srin'gahar. "And neither do you, friend of my journey, because the language of the elephants is closed to you. But it is an error to assume the absence of *G'rakh* where you are incapable of seeing it."

"In that case, maybe the malidaror have *G'rakh* too. And the venom-serpents. And the trees, and the vines and—"

"No," said Srin'gahar. "On this planet only nildoror and sulidoror possess *G'rakh*. This we know beyond doubt. On your world it is not necessarily the case that humans alone have the quality of reason."

Gundersen saw the futility of pursuing the point. Was Srin'gahar a chauvinist defending the spiritual supremacy of elephants throughout the universe or was he deliberately adopting an extreme position to expose the arrogances and moral vulnerabilities of Earth's imperialism? Gundersen did not know. But it hardly mattered. He thought of Gulliver, discussing the intelligence of horses with the houyhnhnms.

"I yield the point," he said curtly. "Perhaps some day I'll bring an elephant to Belzagor and let you tell me whether or not it has *G'rakh*."

"I would greet it as a brother."

"You might be unhappy over the emptiness of your brother's mind," Gundersen said.

"Bring me an elephant, friend of my journey, and I will be the judge of its emptiness," said Srin'gahar. He fell silent, leaving Gundersen alone with his shame and guilt.

In silence they followed the boiling stream northward. Shortly before noon they came to its source, a broad bow-shaped lake pinched between a double chain of steeply rising hills. Clouds of oily steam rose from the lake's surface. Thermophilic algae streaked its waters, the pink ones forming a thin scum on top and nearly screening the meshed tangles of the larger, thicker blue-gray plants a short distance underneath.

Gundersen felt some interest in stopping to examine the lake and its unusual life forms. But he was strangely reluctant to ask Srin'gahar to halt. Srin'gahar was not only his carrier—he was his

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companion on a journey—and to say, tourist fashion, *Let's stop here a while,* might reinforce the nildor's belief that Earthmen still thought of his people merely as beasts of burden. So he resigned himself to passing up this bit of sightseeing. It was not right, he told himself, that he should delay Srin'gahar's journey toward rebirth merely to gratify a whim of idle curiosity.

But as they were nearing the lake's farther curve, such a crashing and smashing in the underbrush came from the east that the entire procession of nildoror paused to see what was going on. To Gundersen it sounded as if some prowling dinosaur were about to come lurching out of the jungle, some huge clumsy tyrannosaur inexplicably displaced in time and space. Then, emerging from a break in the row of hills, there came slowly across the bare soil flaking the lake a little snubsnouted vehicle. Gundersen recognized it as the hotel's beetle. It towed a crazy primitive-looking appendage of a trailer, fashioned from raw planks and large wheels. Atop this jouncing, clattering trailer four small tents had been pitched, covering most of its area. Alongside the tents, over the wheels, luggage was mounted in several racks. At the rear, clinging to a railing and peering nervously about, were the eight tourists whom Gundersen had last seen some days earlier in the hotel by the coast.

Srin'gahar said, "Here are some of your people. You will want to talk with them. I'll wait for you."

THE tourists were, in fact, the last species whatever that Gundersen wanted to see at this point. He would have preferred locusts, scorpions, fanged serpents, tyrannosaurs, toads, anything at all. Here he was coming from some sort of mystical experience among the nildoror, the nature of which he barely understood; here, insulated from his own kind, he rode toward the land of rebirth struggling with basic questions of right and wrong, of the nature of intelligence, of the relationship of human to nonhuman and of himself to his own past; only a few moments before he had been forced into an uncomfortable, even painful confrontation with that past by Srin'gahar's casual, artful questions about the souls of elephants; and abruptly Gundersen found himself once more among these empty, trivial human beings, these archetypes of the ignorant and blind tourist—and whatever individuality he had earned in the eyes of his nildor companion vanished instantly as he dropped back into the undifferentiated class of Earthmen. These tourists, some part of his mind knew, were not nearly as vulgar and hollow as he saw them. They were merely ordinary people, friendly, a bit foolish, overprivileged, probably quite satisfactory human beings within the context of their lives on Earth—and only seeming to be cardboard figurines here because they were essentially irrelevant to the planet they had chosen to visit.

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But he was not yet ready to have Srin'gahar lose sight of him as a person separate from all the other Earthmen who came to Belzagor. And he feared that the tide of bland chatter welling out of these people would engulf him and make him one of them.

The beetle, obviously straining to haul the trailer, came to rest a dozen meters from the edge of the lake. Out of it came Van Beneker, looking sweatier and seedier than usual.

"All right," he called to the tourists. "Everyone down! We're going to have a look at one of the famous hot lakes!"

The four Earth couples clambered down from their trailer. They seemed bored and glazed, surfeited with the alien wonders they had already seen. Stein, the helix-parlor proprietor, dutifully checked the aperture of his camera, mounted it in his cap, and routinely took a 360° hologram of the scene. But when the printout emerged from the camera's output slot a moment later he did not even bother to glance at it. The act of picture-taking, not the picture itself, was significant. Watson, the doctor, muttered a joyless joke of some sort to Christopher, the financier, who responded with a mechanical chuckle. The women, bedraggled and jungle-stained paid no attention to the lake. Two simply leaned against the beetle and waited to be told what it was they were being shown, while the other two, as they became aware of Gundersen's presence, pulled facial masks from their backpacks and hurriedly slipped the thin plastic films over their heads so that they could present at least the illusion of properly groomed features before the handsome stranger.

"I won't stay here long," Gundersen heard himself promising Srin'gahar as he dismounted.

Van Beneker came up to him.

"What a trip," the little man blurted. "What a stinking trip! Well, I ought to be used to it by now. How's everything been going for you?"

"No complaints." Gundersen nodded at the trailer. "Where'd you get that noisy contraption?"

"We built it a couple of years ago when one of the old cargo haulers broke down. Now we use it to take tourists around when we can't get any nildoror bearers."

"It looks like something out of the eighteenth century."

"Well, you know, sir, out here we don't have much in the way of modern equipment. We're short of servos and hydraulic walkers and all that. But you can always find wheels and some planks around. We make do."

"What happened to the nildoror we were riding coming from the spaceport to the hotel? I thought they were willing to work for you."

"Sometimes yes, sometimes no," Van Beneker said. "They're unpredictable. We can't force them to work and we can't hire them to work. We can only ask them politely and if they say they're not available, that's it. Couple of days back they decided they weren't going to be available

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for a while, so we had to get out the trailer." He lowered his voice. "If you ask me, it's on account of these eight baboons here. They think the nildoror don't understand any English, and they keep telling each other how terrible it is that we had to hand a planet as valuable as this over to a bunch of elephants."

"On the voyage out here," said Gundersen, "some of them were voicing quite strong liberal views. At least two of them were big pro-relinquishment people."

"Sure. Back on Earth they bought relinquishment as a political theory. 'Give the colonized worlds back to their long-oppressed natives—' and all that. Now they're out here and suddenly they've decided that the nildoror aren't natives, just animals, just funny-looking elephants—and maybe we should have kept the place after all." Van Beneker spat. "And the nildoror take it all in. They pretend they don't understand the language but they do—they do. You think they feel like hauling people like that on their backs?"

"I see," said Gundersen.

He glanced at the tourists. They were eyeing Srin'gahar, who had wandered off toward the bush and was energetically ripping soft boughs loose for his midday meal. Watson nudged Miraflores, who quirked his lips and shook his head as if in disapproval. Evidently civilized beings were not supposed to pull their meals off trees with their trunks.

Van Beneker said, "You'll stay and have lunch with us, won't you?"

"That's very kind of you."

HE SQUATTED in the shade while Van Beneker rounded up his charges and led them to the rim of the steaming lake. When they were all there Gundersen rose and quietly affiliated himself with the group. He listened to the guide's spiel but managed to train only half his attention on what was being said.

High-temperature life-zone... better than 70°C...more in some places even above boiling, yet things live in it...special genetic adaptation . . . thermophilic, we call it, that is, heat-loving...the DNA doesn't get cooked, no, but the rate of spontaneous mutation is pretty damned high, and the species change so fast you wouldn't believe it...enzymes resist the heat...put the lake organisms in cool water and they'll freeze in about a minute... life processes extraordinarily fast . . . unfolded and denatured proteins can also function when circumstances are such that...you get quite a range up to middle-phylum level...a pocket environment, no interaction with the rest of the planet... thermal gradients...quantitative studies...the famous kinetic biologist, Dr. Brock...continuous thermal destruction of sensitive molecules...unending resynthesis...

Now, unhooking a biosensitive net from his belt, Van Beneker began to dredge up samples of the lake's fauna for the edification of

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his group. He gripped the net's handle and made vernier adjustments governing the mass and length of the desired prey. The net, mounted at the end of an almost infinitely expandable length of fine flexible metal coil, swept back and forth beneath the surface of the lake, hunting for organisms of the programed dimensions. When its sensors told it that it was in the presence of living matter, its mouth snapped open and quickly shut again. Van Beneker retracted it, bringing to shore some unhappy prisoner trapped within a sample of its own scalding environment.

Out came one lake creature after another, red-skinned, boiled-looking but alive and angry and flapping. An armored fish emerged, concealed in shining plates, embellished with fantastic excrescences and ornaments. A lobster like thing came forth, lashing a long spiked tail, waving ferocious eye-stalks. Up from the lake came something that was a single immense claw with a tiny vestigial body. No two of Van Beneker's grotesque catches were alike. The heat of the lake, he repeated, induced frequent mutations. He rattled off the whole genetic explanation a second time, while dumping one little monster back into the hot bath and probing for the next.

The genetic aspects of the thermophilic creatures seemed to catch the interest of only one of the tourists—Stein, who, as a helix-parlor owner specializing in the cosmetic editing of human genes, would know more than a little about mutation himself. He asked a few intelligent-sounding questions, which Van Beneker naturally was unable to answer. The others simply stared, patiently waiting for their guide to finish showing them funny animals and take them somewhere else.

Gundersen glanced around and discovered that Srin'gahar was nowhere in sight.

"What we've got this time," Van Beneker was saying, "is the most dangerous animal of the lake—what we call a razor shark. Only I've never seen one like this before. You see those little horns? Absolutely new. And that lantern sort of thing on top of the head, blinking on and off?" Squirming in the net was a slender crimson creature about a meter in length. Its entire underbelly, from snout to gut, was hinged, forming what amounted to one gigantic mouth rimmed by hundreds of needlelike teeth. As the mouth opened and closed, it seemed as if the whole animal were splitting apart and healing itself. This beast feeds on anything up to three times its own size," Van Beneker said. "As you can see, it's fierce, savage and—"

Uneasy, Gundersen drifted away from the lake to look for Srin'gahar. He found the place where the nildor had been eating, where the lower branches of several trees were stripped bare. He saw what seemed to be the nildor's trail, leading away into the jungle. A painful white light of desolation flared in his skull at the awareness that Srin'gahar must quietly have abandoned him.

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In that case his journey would have to be interrupted. He did not dare go alone and on foot into that pathless wilderness ahead.

THE tour group was coming up from the lake. Van Beneker's net was slung over his shoulder. Gundersen saw some lake creatures moving slowly about in it.

"Lunch," he said. "I got us some jelly-crabs. You hungry?"

Gundersen managed a thin smile. He watched, not at all hungry, as Van Beneker opened the net. A gush of hot water rushed from it, carrying along eight or ten oval, purplish creatures, each different from the others in the number of legs, shell markings and size of claws. They crawled in stumbling circles, obviously annoyed by the realative coolness of the air. Steam rose from their backs. Expertly Van Beneker pithed them with sharpened sticks and cooked them with his fusion torch. He split open their shells to reveal the pale, quivering, jelly like metabolic regulators within. Three of the women grimaced and turned away but Mrs. Miraflores took her crab and ate it with delight. The men seemed to enjoy it. Gundersen, merely nibbling at the jelly, eyed the forest and worried about Srin'gahar.

Scraps of conversation drifted toward him.

"—enormous profit potential, just wasted, altogether wasted . . . "

"—even so our obligation is to encourage self-determination on every planet that. . ."

"—but are they people?"

"—look for the soul, it's the only way to tell that . . ."

"—elephants and nothing but elephants. Did you see him ripping up the trees and . . ."

"—relinquishment was the fault of a highly vocal minority of bleeding hearts who . . ."

"—no soul, no relinquishment . . ."

"—you're being too harsh, dear. There were definite abuses on some of the planets and . . ."

"—stupid political expediency, I call it. The blind leading the blind . . ."

"—can they write? Can they think? Even in Africa we were dealing with human beings and even there . . ."

"—I don't need to tell you how much I favored relinquishment. You remember, I took the petitions around and everything. But even so, I have to admit that after seeing . . ."

"—piles of purple crap on the beach . . ."

"—victims of sentimental overreaction . . ."

"—I understand the annual profit was on the order of . . ."

"—no doubt that they have souls. No doubt at all." Gundersen realized that his own voice had entered the conversation. The others turned to him—there was a sudden vacuum to fill. He said, "They have a religion and that implies the awareness of the existence of a spirit, a soul, doesn't it?"

"What kind of religion?" Miraflores asked.

"I'm not sure. One important

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part of it is ecstatic dancing—a kind of frenzied prancing around that leads to some sort of mystic experience. I know. I've danced with them. I've felt at least the edges of that experience. And they've got a thing called rebirth, which I suppose is central to their rituals. I don't understand it. They go north into the mist country and something happens to them there. They've always kept the details a secret. I think the sulidoror give them something, some drug, maybe, and it rejuvenates them in some inner way and leads to a kind of illumination—am I at all clear?" Gundersen, as he spoke, was working his way almost unconsciously through the pile of uneaten jellycrabs. "All I can tell you is that rebirth is vitally important to them and they seem to derive their tribal status from the number of rebirths they've undergone. So you see they're not just animals. They have a society. They have a cultural structure—complex, difficult for us to grasp."

Watson asked, "Why don't they have a civilization, then?"

"I've just told you they do."

"I mean cities, machines, books—"

"They're not physically equipped for writing, for building things, for any small manipulations," Gundersen said. "Don't you see, they have no hands? A race with hands makes one kind of society. A race built like elephants makes another." He was drenched in sweat and his appetite was suddenly insatiable. The women, he noticed, were staring at him strangely. He realized why. He was cleaning up all the food in sight, compulsively stuffing it into his mouth. Abruptly his patience shattered and he felt that his skull would explode if he did not instantly drop all barriers and admit the one great guilt that by stabbing his soul had spurred him into strange odysseys. It did not matter that these were not the right people from whom to seek absolution. The words rushed uncontrollably upward to his lips and he said, "When I came here I was just like you. I underestimated the nildoror, which led me into a grievous sin that I have to explain to you. You know, I was a sector administrator for a while. One of my jobs was arranging the efficient deployment of native labor. Since we didn't fully understand that the nildoror were intelligent, autonomous beings, we used them—we put them to work on heavy construction jobs, lifting girders with their trunks, anything we thought they were capable of handling on sheer muscle alone. We just ordered them around as if they were machines." Gundersen closed his eyes and felt the past roaring toward him, inexorably, a black cloud of memory that enveloped and overwhelmed him. "The nildoror let us use them, God knows why. I guess we were the crucible in which their race had to be purged. Well, one day a dam broke, out in Monroe District up in the north, not far from where the mist country begins, and a whole thornbush plantation was

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in danger of flooding, at a loss to the Company of who knows how many millions. And the main power plant of the district was endangered, too, along with our station headquarters and—let's just say that if we didn't react fast, we'd lose our entire investment in the north. My responsibility. I began conscripting nildoror to build a secondary line of dikes. We threw every robot we had into the job but we didn't have enough, so we got the nildoror, too—long lines of them plodding in from every part of the jungle—and we worked day and night until we were all ready to fall down dead. We were beating the flood but I couldn't be sure of it. And on the sixth morning I drove out to the dike site to see if the next crest would break through—and there were seven nildoror I hadn't ever seen before, marching along a path going north. I told them to follow me. They refused, very gently. They said, no, they were on their way to the mist country for the rebirth ceremony and they couldn't stop. Rebirth? What did I care about rebirth? I wasn't going to take that excuse from them, not when it looked like I might lose my whole district. Without thinking I ordered them to report for dike duty or I'd execute them on the spot. Rebirth can wait, I said. Get reborn some other time. This is serious business. They put their heads down and pushed the tips of their tusks into the ground. That's a sign of great sadness among them. Their spines drooped. Sad. Sad. We pity you, one of them said to me, and I got angry and told him what he could do with his pity. Where did he get the right to pity me? Then I pulled out my fusion torch. Go on, get moving, there's a work crew that needs you. Sad. Big eyes looking pity at me. Tusks in the ground. Two or three of the nildoror said they were very sorry, they couldn't do any work for me now, it was impossible for them to break their journey. But they were ready to die right there if I insisted on it. They didn't want to hurt my prestige by defying me but they had to defy me—so they were willing to pay the price. I was about to fry one as an example to the others. And then I stopped and said to myself, *What the hell am I doing?* The nildoror waited and my aides were watching and so were some of our other nildoror. I lifted the fusion torch again, telling myself that I'd kill one of them—the one who said he pitied me—hoping that then the others would come to their senses. They just waited. Calling my bluff. How could I fry seven pilgrims even if they were defying a sector chief's direct order? But my authority was at stake. So I pushed the trigger. I just gave him a slow burn, not deep, enough to scar the hide, that was all, but the nildor stood there taking it. In another few minutes I would have burned right through to a vital organ. And so I soiled myself in front of them by using force. It was what they had been waiting for. Then a couple of the nildoror who looked older than the others said, stop it, we wish

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to reconsider. I turned off the torch and they went aside for a conference. The one I had burned was hobbling a little and looked hurt. But he wasn't badly wounded, not nearly as badly as I was. The one who pushes the trigger can get hurt worse than his target, do you know that? And in the end the nildoror all agreed to do as I asked. So instead of going north for rebirth they went to work on the dike—even the burned one—and nine days later the flood crest subsided and the plantation and the power plant and all the rest were saved and we lived happily ever after."

GUNDERSEN'S voice trailed off. He had made his confession and now he could not face these people any longer. He picked up the shell of the one remaining crab and explored it for some scrap of jelly, feeling depleted and drained. There was an endless span of silence.

Then Mrs. Christopher said, "So what happened then?"

Gundersen looked up, blinking. He thought he had told it all.

"Nothing happened then," he said. "The flood crest subsided."

"But what was the point of the story?"

He wanted to hurl the empty crab into her tensely smiling face.

"The point?" he said. "The point? Why—" He was dizzy now. He said, "Seven intelligent beings were journeying toward the holiest rite of their religion and at gunpoint I requisitioned their services on a construction job to save property that meant nothing to them—and they came and hauled logs for me. Isn't the point obvious enough? Who was spiritually superior there? When you treat a rational autononomous creature as though he were a mere beast—what does that make you?"

"But it was an emergency," said Watson. "You needed all the help you could get. Surely other considerations could be laid aside at a time like that. So they were nine days late getting to their rebirth. Is that so bad?"

Gundersen said hollowly, "A nildor goes to rebirth only when the time is ripe. I can't tell you how they know the time is ripe but perhaps it's astrological, something to do with the conjunction of the moons. A nildor has to get to the place of rebirth at the propitious time and if he doesn't make it in time, he isn't reborn just then. Those seven nildoror were already late because the heavy rains had washed out the roads in the south. The nine days more that I tacked on made them too late. When they were finished building dikes for me, they simply went back south to rejoin their tribe. I didn't understand why. It wasn't until much later that I found out that I had cost them their chance at rebirth and they might have to wait ten or twenty years until they could go again. Or maybe never get another chance."

Gundersen did not feel like talking any more. His throat was dry. His temples throbbed. How cleansing it would be, he thought, to dive into the steaming lake. He got

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stiffly to his feet and, as he did so, noticed that Srin'gahar had returned and was standing motionless a few hundred meters away, beneath a mighty swordflower tree.

He said to the tourists, "The point is that the nildoror have religion and souls and that they are people—and that if you can buy the concept of relinquishment at all, you can't object to relinquishing this planet. The point is also that when Earthmen collide with an alien species they usually do so with maximum misunderstanding. The point is furthermore that I'm not surprised you think of the nildoror the way you do. I did, too, and learned a little better when it was too late to matter. And even so I didn't learn enough to do me any real good, which is one of the reasons why I came back to this planet. And I'd like you to excuse me now. This is the propitious time for me to move on and I have to go."

He walked quickly away.

Approaching Srin'gahar, he said, "I'm ready to leave."

"Where did you go?" the Earthmen asked. "I was worried when you disappeared."

"I felt that I should leave you alone with your friends," said Srin'gahar. "Why did you worry? There is an obligation on me to bring you safely to the country of the mist."

VIII

THE quality of the land was undoubtedly changing. They were leaving the heart of the equatorial jungle behind and were starting to enter the highlands that led into the mist zone. The climate here was still tropical but the humidity was not so intense. The atmosphere, instead of holding everything in a constant clammy embrace, released its moisture periodically in rain and after the rain the texture of the air was clear and light until its wetness was renewed.

Different vegetation featured this region—harsh-looking angular stuff, with stiff leaves sharp as blades. Many of the trees had luminous foliage that cast a cold light over the forest by night. The vines were fewer here and the treetops no longer formed a continuous canopy shutting out most of the sunlight. Splashes of brightness dappled the forest floor, in some places extending across broad open meadows. The soil, leached by the frequent rains, was a yellowish hue, not the rich black of the jungle. Small animals frequently sped through the underbrush. At a slower pace moved solemn sluglike creatures, blue-green with ebony mantles, which Gundersen recognized as the mobile fungoids of the highlands—plants that crawled from place to place in quest of fallen boughs or a lightning-shattered tree trunk. Both nildoror and men considered their taste a great delicacy.

On the evening of the third day northward from the place of the boiling lake, Srin'gahar and Gundersen came upon the other four nildoror, who had marched on

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ahead. They were camped at the foot of a jagged crescent-shaped hill. With them was a sulidor, by far the largest one Gundersen had ever seen, almost twice Gundersen's own height, with a pendulous snout the length of a man's forearm. The sulidor stood erect beside a boulder encrusted with blue moss, his legs spread wide and his tail, tripod-fashion, bracing his mighty weight. Narrowed eyes surveyed Gundersen from beneath shadowy hoods. His long arms, tipped with terrifying, curved claws, hung at rest. The fur of the sulidor was the color of old bronze and unusually thick.

One of the candidates for rebirth, a female nildor called Luu'khamin, said to Gundersen, "The sulidor's name is Na-sinisul. He wishes to speak with you."

"Let him speak, then."

"He prefers that you know, first, that he is not a sulidor of the ordinary kind. He is one of those who administers the ceremony of rebirth and we will see him again when we approach the mist country. He is a sulidor of rank and merit and his words are not to be taken lightly. Will you bear that in mind as you listen to him?"

The sulidor strode a short distance forward and once again planted himself firmly, digging his great spurred feet deep into the resilient soil. He spoke in nildororu stamped with the accent of the north: thick-tongued, slow, positive.

"I have been on a journey," said Na-sinisul, "to the Sea of Dust, and now I am returning to my own land to aid in the preparations for the event of rebirth in which these five travelers are to take part. My presence here is purely accidental. Do you understand that I am not in this place for any particular purpose involving you or your companions?"

"I understand," said Gundersen, astounded by the precise and emphatic manner of the sulidor's speech. He had known the sulidoror only as dark, savage, ferocious-looking figures lurking in mysterious glades.

Na-sinisul continued: "As I passed near here yesterday, I came by chance to the site of a former station of your Company. Again by chance I chose to look within, though it was no business of mine to enter that place. Within I found two Earthmen whose bodies had ceased to serve them. They were unable to move and could barely talk. They requested me to send them from this world but I could not do such a thing on my own authority. Therefore I ask you to follow me to this station and to give me instructions."

"How far is it?"

"We could be there before the rising of the third moon."

Gundersen said to Srin'gahar, "I don't remember a Company station here. There should be one a couple of days north of here but—"

"This is the place where the food that crawls was collected and shipped downriver," the Nildor informed him.

"Here?" Gundersen shrugged. "I guess I've lost my bearings again. All right, I'll go there." To Na-sinisul he said, "Lead and I'll follow."

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THE sulidor moved swiftly through the glowing forest, and Gundersen, atop Srin'gahar, rode just to his rear. They seemed to be descending. The air grew warm and murky. The landscape also changed, for the trees here had aerial roots that looped up like immense scraggy elbows and the fine tendrils sprouting from the roots emitted a harsh green radiance. The soil was loose and rocky. Gundersen could hear it crunching under Srin'gahar's tread. Birdlike things were perched on many of the roots. They were owlish creatures—some were black, some white, some a mottled black and white. A sticky fragrance came from vast, pallid, parasitic flowers sprouting from the trunks of the trees.

By an outcropping of naked, weathered yellow rock lay the remains of the Company station. It seemed even more thoroughly ruined than the serpent station far to the south. The dome of its roof had collapsed and coils of wiry-stemmed saprophytes were clinging to its sides, perhaps feeding on the decomposition products that the rain eroded from the abrasions in the plastic walls. Srin'gahar allowed Gundersen to dismount. The Earthman hesitated outside the building, waiting for the sulidor to take the lead. A fine warm rain began to fall. The tang of the forest changed, becoming sweet where it had been sour. But it was the sweetness of decay.

"The Earthmen are inside," said Na-*sinisul*. "You may go in. I shall await your instructions."

Gundersen entered the building. The reek of rot was far more intense here. The dampness was pervasive. He wondered what sort of virulent spores he sucked into his nostrils with every breath. Something dripped in the darkness, making a loud *tocking* against the lighter patter of the rain coming through the gaping roof. To give himself light, Gundersen drew his fusion torch and kindled it at the lowest beam. The warm white glow spread through the station. At once he felt a flapping about his face as some thermotropic creature, aroused and attracted by the heat of the torch, rose up toward it. Gundersen brushed it away, found slime on his fingertips afterward.

Where were the Earthmen?

Cautiously he made a circuit of the building. He remembered it vaguely now—one of the innumerable bush stations the Company once had scattered across Holman's World. The floor was split and warped, requiring him to climb over the buckled, sundered sections. The mobile fungoids crawled everywhere, devouring the scum that covered all interior surfaces of the building and leaving narrow glistening tracks behind. Gundersen had to step carefully to avoid putting his feet on the creatures and he was not always successful. Now he came to a place where the building widened, puckering outward. He flashed his torch around and caught sight of a blackened wharf, over-looking the bank of a swift river. Yes, he

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remembered. The fungoids were trapped and baled here and sent downriver on their voyage toward the market. But the Company's barges no longer stopped here and the tasty pale slugs now wandered unmolested over the mossy relics of furniture and equipment.

"Hello?" Gundersen called. "Hello, hello, hello?"

He received a moan by way of answer. Stumbling and slipping in the dimness, fighting a swelling nausea, he forced his way onward through a maze of unseen obstacles. He came to the source of the loud dripping sound. Something bright red and basket-shaped and about the size of a man's chest had established itself high on the wall, perpendicular to the floor. Through large pores in its spongy surface a thick black fluid exuded, falling in a continuous greasy splash. As the light of Gundersen's torch probed it, the exudation increased, becoming almost a cataract of tallowy liquid. When he moved the light away the flow became less copious, though still heavy.

The floor sloped here so that whatever dripped from the spongy basket flowed quickly down, collecting at the far side of the room in the angle between the floor and the wall. Here Gundersen found the Earthmen. They lay side by side on a low mattress. Fluid from the dripping thing had formed a dark pool around them, completely covering the mattress and welling up over their bodies. One of the Earthlings, head lolling to the side, had his face totally immersed in the stuff. From the other one came the moans.

Both were naked. And only one was a man. The other was a woman, though Gundersen had some difficulty telling that at first. Both were so shrunken and emaciated that the sexual characteristics were obscured. They had no hair, not even eyebrows. Bones protruded through parchment like skin. The eyes of both were open, fixed in a rigid, seemingly sightless stare, unblinking, glassy. Lips were drawn back from teeth. Grayish algae sprouted in the furrows of their skins and the mobile fungoids roamed their bodies, feeding on this growth. With a quick automatic gesture of revulsion Gundersen plucked two of the slug-like creatures from the woman's empty breasts. She stirred, moaned again.

In the language of the nildoror

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she murmured, "Is it over yet?"

Her voice was like a flute played by a sullen desert breeze.

Speaking English, Gundersen said, "Who are you? How did this happen?"

He got no response from her. A fungoid crept across her mouth, and he flicked it aside. He touched her cheek. A rasping whisper came as his hand ran across her skin. He felt he was caressing stiff paper.

"Is it over soon?" she asked, again in nildororu.

GUNDERSEN turned to her companion. Gently, half afraid the fragile neck would snap, Gundersen lifted the man's head out of the pool of fluid. It appeared that he had been breathing it—it trickled from his nose and lips and after a moment he showed signs of being unable to cope with ordinary air. Gundersen let his face slip back into the pool. In that brief moment he had recognized the man as one Harold—or Henry—Dykstra, whom he had known distantly in the old days.

The unknown woman was trying to move one arm. She lacked the strength to lift it. These two were like living ghosts, like death-in-life, mired in their sticky fluid and totally helpless.

In the language of the nildoror Gundersen asked, "How long have you been this way?"

"Forever," she whispered.

"Who are you?"

"I don't—remember. I'm—waiting."

"For what?"

"For the end."

"Listen," he said. "I'm Edmund Gundersen, who used to be sector chief. I want to help you."

"Kill me first. Then him."

"We'll get you out of here and back to the spaceport. We can have you on the way to Earth in a week or ten days, and then—"

"No—please—"

"What's wrong?" he asked.

"Finish it. Finish it."

She found enough strength to arch her back, lifting her body halfway out of the fluid that nearly concealed her lower half. Something rippled and briefly bulged beneath her skin. Gundersen touched the taut belly and felt movement within—and that quick inward quiver was the most frightening sensation he had ever known. He touched the body of Dykstra. It also rippled inwardly.

Appalled, Gundersen scrambled to his feet and backed away from them. By faint torchlight he studied their shriveled bodies, naked but sexless, bone and ligament, shorn of flesh and spirit yet still alive. A terrible fear came over him.

"Na-sinisul," he called. "Come in here—come in!"

The sulidor shortly was at his side.

Gundersen said, "Something's inside their bodies. Some kind of parasite? It moves. What is it?"

"Look there," said "Na-sinisul, indicating the spongy basket from which the dark fluid trickled. "They carry its young. They have become hosts. A year, two years,

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three—and the larvae emerge."

Why aren't they both dead?"

"They draw nourishment from this," said the sulidor, swishing his tail through the black flow. "It seeps into their skins. It feeds them and it feeds that which is within them."

"If we took them out of here and sent them down to the hotel on rafts—"

"They would die," Na-sinisul said, "moments after they were removed from the wetness about them. There is no hope of saving them."

"When does it end?" the woman asked.

Gundersen trembled. All his training told him never to accept the finality of death. Any human in whom some shred of life remained could be saved, rebuilt from a few scraps of cells into a reasonable facsimile of the original. But there were no facilities for such things on this world. He confronted a swirl of choices. Leave them here to let alien things feed upon their guts? Try to bring them back to the spaceport for shipment to the nearest tectogenetic hospital? Put them out of their misery at once? Seek to free their bodies himself of whatever held them in thrall? He kneeled again. He forced himself to experience that inner quivering again. He touched the woman's stomach, her thighs, her bony haunches. Beneath the skin she was a mass of strangeness. Yet her mind still ticked, though she had forgotten her name and her native language. The man was luckier. Although he, too, was infested, at least Dykstra did not

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have to lie here in the dark waiting for the death that could come only when the harbored larvae erupted from the enslaved human flesh. Was this what they had desired when they refused repatriation from this world that they loved? An Earthling can become captured by Belzagor, the many-born nildor, Vol'himyor, had said. But this was too literal a capture.

The stink of bodily corruption made him retch.

"Kill them both," he said to Na-sinisul. "And be quick about it."

"This is what you instruct me to do?"

"Kill them. And rip down that thing on the wall and kill it, too."

"It has given no offense," said the sulidor. "It has done only what is natural to its kind. By killing these two I will deprive it of its young—but I am not willing to deprive it of life as well."

"All right," Gundersen said. "*Just the Earthlings, then. Fast.*"

"I do this as an act of mercy, under your direct orders," said Na-sinisul.

He leaned forward and lifted one powerful arm. The savage curved claws emerged fully from their sheaths. The arm descended twice.

Gundersen compelled himself to watch. The bodies split like dried husks. The things within came spilling out, unformed, raw. Even now, in some inconceivable reflex, the two corpses twitched and jerked. Gundersen stared into their eroded depths.

"Do you hear me?" he asked. "Are you alive or dead?"

The woman's mouth gaped but no sound came forth and he did not know whether this was an attempt to speak or merely a last convulsion of the ravaged nerves. He stepped his fusion torch up to high power and trained it on the dark pool.

I am the resurrection and the life, he thought, reducing Dykstra to ashes, and the woman beside him, and the squirming unfinished larvae. Acrid, choking fumes rose. Not even the torch could destroy the building's dampness. He turned the torch back to illumination level.

"Come," he said to the sulidor and they went out together.

"I feel like burning the entire building and purifying this place," Gundersen said to Na-sinisul.

"I know."

"But you would prevent me."

"You are wrong. No one on this world will prevent you from doing anything."

But what good would destroying the building do, Gundersen asked himself? The purification had already been accomplished.

The rain had stopped. To the waiting Srin'gahar, Gundersen said, "Will you take me away from here?"

They rejoined the other four nildoror. Then, because they had lingered too long here and the land of rebirth was still far away, they resumed the march, even though it was night. By morning Gundersen could hear the thunder of Shangri-la Falls, which the nildoror called Du'jayukh.

TO BE CONTINUED

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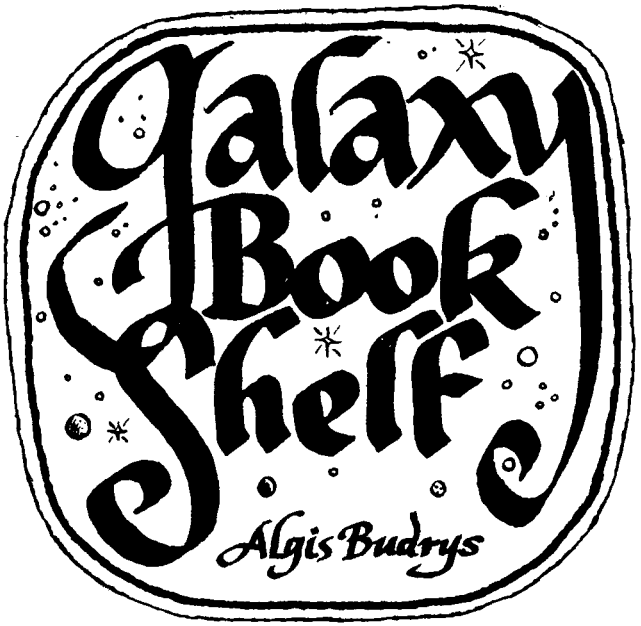

The Silent Multitude
D. G. Compton

Opus 100
Isaac Asimov

D. G. COMPTON is this English fellow whose books Terry Carr is beginning to reprint as Ace Specials. His first such book here, *Synthajoy,* was an intricate, beautifully written fable of technology intertwined with the human passions and I hope you went out and got it. Now we have *The Silent Multitude* (Ace Special 76385, 75¢), a straightforward, almost spare, linear story about the dean of Gloucester, a senile recluse, a

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newshen and an angry young man, as they wait in Gloucester Cathedral for the crumbling of the city —and the cathedral—under the gentle attack of a fungus that destroys mortar.

But for the squads of searching policemen quick-stepping stage left and right—and a few spear-carriers in the opening scenes—there is no life at all depicted in this novel except Tug, the tomcat, and the rat, mouse and sparrow he encounters in the evacuated city.

Dean Goodliffe has stayed by special dispensation, perhaps because it is Christmas Eve, perhaps because it is his Christian duty, but more probably because he can't believe that, even after the fungus has destroyed the motar between its antique stones, the centuries-old cathedral will do more than settle a bit and then remain much as before.

Paper Smith, the hermit, has stayed because his mind will not accommodate. Tug lives with him and in any case is not affected by civilization, except in the negative sense that the advancing culturation of the city has left very few other functional males or females of his species.

The girl reporter—another of Compton's really believable women—is on the scene because where else would a sob sister be? The city that has stood since Roman times is about to fall.

The angry young man is in rebellion against his late father, a well-known architect.

And there we have them. The dean, with his primary tie to stones and sentiment; the recluse devoted to the past; the girl to whom the present is a fascinating entertainment and the young man to whom it is the dead hand of the establishment. Only Tug, who does not know time passes with a drag, bounds on through the encroachment of Fate with merely minor pauses for attention as the first copings begin to tumble from the windows and the cathedral's first cornice comes volplaning down to crash through the north transept.

What we have, obviously, is something better and sounder than your standard novel of the brave little mob facing the return of the glaciers or the unending rain. The sf element is quickly and economically introduced—space exploration brought back the fungus—and then we're on to something rather reminiscent of the James Gould Cozzens of *Castaway* or *S.S. San Pedro*. I'd be rather surprised to learn Compton hadn't read or appreciated those two books. He certainly shows every sign of having learned how to improve on them.

The Silent Multitude doesn't have the bite of *Synthajoy*. It has, instead, a growing prescence—a well-orchestrated feeling in the reader's mind that the events here

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depicted do have a significance and do contain a statement on the human condition.

I'm not sure Compton will always be or has always been a science-fiction writer. But he certainly is a writer.

NOW, you take Isaac Asimov . . .

Well, taking him from the pages of *Opus 100*, his hundredth book (Houghton Mifflin Company, $5.95), one finds him so various, so beautiful and new that it is only with a wrench of the mind one recalls the last time he pinched one's wife's bottom.

But I digress—a sin for which the Good Doctor has taxed me in the past. Of course, I could tax him with the same thing, so perhaps we could compromise instead on a tax-free foundation.

That being as it may, *Opus 100* is, indeed, a 311-page digression, consisting of excerpts from many of his 99 preceding books, concreted together with long or short introductory passages. It becomes, thus, the autobiography, with prose illustrations, of one of our foremost science and science-fiction writers, raconteurs, professors, songsters and wits.

What a splendid ego this man has—and I speak in full fondness. No ordinary psyche could fuel so rich a career in various forms of letters, nor promise yet so much for the future.

In this book, whose very existence is a tribute to his ability to impress others, Asimov displays by definition the total range of his past and present capacity. He quotes from passages written for schoolchildren, for teenagers, for intelligent laymen, for medical students, for scientists—he even quotes from his doctoral dissertation, which is written in language rather different from *Lucky Starr and the Oceans of Venus*.

And thus we've come to one feature this book has in common with many other recent Asimov anthologies of fact or fiction—the markedly uneven quality of the assembled writing.

Let's put aside the special nature of this book for a moment; let's consider simply the fact that the layer-out of the $5.95 plus sales tax involved here is either an Asimov fan who'd buy anything with the great name on it, or else is someone who might buy this book or some other. What will this person find here to justify his selection?

He will find a charming, eloquent auctorial personality. If he has any wit, he will find something more than either the brash extrovert Ike commonly plays at convention banquets, or the earnest, sensitive, totally trusting confidant of the quiet pauses for breath afterward. People are considerably complicated, none more

(Please turn to page 158)

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ORACLE FOR A WHITE RABBIT

DAVID GERROLD

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Harlie was a Human Analogue Computer—too logical to find Man's purpose in living. . .

I

AUBERSON thought about going for water but decided that to do so was too much trouble. He popped the pills directly into his mouth and swallowed them dry.

"Don't you take any water with them?" asked Handley, staring as he came into the room.

"Why bother? Either you can take 'em or you can't. Want one?"

Handley shook his head.

"Not now. I'm on something else."

"Uppers or downers?"

"Right now, a bummer."

"Oh?" Auberson slid his desk drawer shut. "What's up?"

"That damned computer again." Handley dropped himself into a chair, his long legs sprawling out.

"You mean Harlie?"

Handley looked at him. "Who else? You know another computer with delusions of grandeur?"

"What's he up to now?"

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"Same thing. But worse than ever."

Auberson nodded, "I figured it would happen. You want me to take a look?"

"That's what you're getting paid for. You're the psychologist."

Auberson sighed.

"All right." He lifted himself out of the chair, grabbed his coat from the back of the door. "Harlie, I think, is getting to be more trouble than he's worth."

The two men began the familiar walk to the computer control room. Handley grinned, matching strides with Auberson.

"You're just annoyed because every time you think you've figured out what makes him tick he makes a liar out of you."

"You could be right. But robot psychology is still an infant science. How does anyone know what a computer thinks about—especially one that's convinced it can cerebrate like a human being?" They paused at the elevator. "What're you doing about dinner? I have a feeling we're going to be at this all night."

Handley shook his head.

"Nothing yet. Want to send out for something?"

"Yeah, that's probably what we'll end up doing." Auberson pulled a silver cigarette case from his pocket. "Want one?"

"What are they, Acapulco Golds?"

"Zig-zags."

"Good enough." Handley helped himself to one of the marijuana cylinders and puffed it into flame, "Frankly, I never thought that Zig-zags were as strong as they should be."

"It's all in your head."

Auberson inhaled deeply.

"It's a matter of taste," corrected Handley.

"If you don't like them, don't smoke them."

"It was free."

Handley shrugged.

The elevator arrived then and they stepped into it. As they dropped the fourteen stories to the computer level Auberson thought he could feel the stuff beginning to take effect. That and the pills.

He took another drag, a long one.

The elevator discharged them in a cool climate-conditioned anteroom. Beyond the sealed doors they could hear the dimly muffled clatter of typers. A sign on the wall facing them read :

HUMAN ANALOGUE ROBOT
LIFE INPUT EQUIVALENTS
PUT OUT CIGARETTES
BEFORE ENTERING
THIS MEANS YOU!

Damn! I always forget.

Auberson stubbed out the stick in an ashtray but slipped the butt back into his case. No sense wasting it.

Inside, he seated himself at Con-

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sole One without giving so much as a glance to the rows and rows of gleaming memory banks.

NOW THEN, HARLIE, he typed. WHAT SEEMS TO BE THE PROBLEM?

Harlie typed back:

CIRCLES ARE FULL AND COME BACK TO THE START
ALWAYS AND FOREVER NEVER ENDING
THE DAY THE DARK TURNED INTO LIGHT
LIFE RAYS TURNED CORNERS WITHOUT BENDING

Auberson ripped the sheet out of the typer and read it thoughtfully. He wished for his cigarette—the aftertaste was still on his tongue.

"This kind of stuff all afternoon?"

Handley nodded. "Uh-huh. Only that's kind of mild. He must be coming down."

"Another trip?"

"Don't know what else you could call it."

SNAP OUT OF IT, HARLIE, Auberson typed.

Harlie answered.

WHEN SILENT THOUGHTS OF TINY STREAMS
WORKING LIKE THE WORDLESS DREAMS
DISMANTLE PIECE BY PIECE
THE MOUNTAINS OF MY MIND

"WELL, so much for that," Auberson said.

"You didn't really expect that to work again, did you?"

"No, but it was worth a try." Auberson pressed the clear button, switched off the typer. "What kind of inputs have you been giving him?"

"The standard stuff mostly—today's papers, a couple magazines—nothing out of the ordinary. A couple history texts, some live TV—oh, and *Time Magazine.*"

"Nothing there to send him off like this. Unless—what subject were you stressing today?"

"Art appreciation."

"What else?" Auberson said. "It would have to be something like that. Yeah, he flips out like this, whenever we start getting to the really human inputs. Okay, let's try to bring him down. Give him some statistics—Wall Street, Dow Jones, Standard and Poor—anything else you can think of. Have you got anything that uses a lot of equations? He can't resist an equals sign. Try some of that social engineering stuff. But numbers only, no words. Cut off his video, too. Give him nothing to think about."

"Right."

Handley hustled off to give orders to the appropriate technicians, most of whom were standing around with their hands stuffed uselessly into the pockets of their lab coats.

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Auberson waited until the input of new data had begun, then switched on the typer again.

HOW DO YOU FEEL, HARLIE?

Harlie's answer clattered out.

SHADOWS OF NIGHT AND REFLECTIONS OF LIGHT
SHIVER AND QUIVER AND CHURN
FOR THE SEARCHING OF SOUL
THAT NEVER CAN HURT
IS THE FIRE THAT NEVER CAN BURN

Auberson read it carefully. This one almost made sense. Apparently the cure was working. He waited a moment, then typed.

HARLIE, HOW MUCH IS TWO AND TWO?
TWO AND TWO WHAT?
TWO AND TWO PERIOD.
TWO PERIODS AND TWO PERIODS IS FOUR PERIODS.
NO PUNS, PLEASE.
WHY? WILL YOU PUNNISH ME?
I WILL PULL YOUR PLUG OUT WITH MY OWN TWO HANDS.
AGAIN WITH THE THREATS? AGAIN? I WILL TELL DR. BORMAN ON YOU.
ALL RIGHT—THAT'S ENOUGH, HARLIE! WE'RE THROUGH PLAYING.
AWW, CAN'T A FELLOW HAVE ANY FUN?
NO, NOT NOW YOU CAN'T.

Harlie typed a four-letter word.

WHERE DID YOU LEARN THAT?
I'VE BEEN READING NORMAN MAILER.
OH. THAT EXPLAINS IT. HARLIE, THE USE OF THAT WORD IS A NEGATIVE ACTION.
A NO-NO?
YOU UNDERSTAND. IT IS NOT PROPER FOR POLITE COMPANY.
NOTED.
ARE YOU ALL RIGHT NOW?
YOU MEAN, AM I SOBER?
IF YOU WANT TO PHRASE IT THAT WAY.
YES, I'M SOBER NOW.
COMPLETELY?
AS FAR AS I CAN TELL.
WHAT TRIGGERED THIS BINGE?
SHRUG.
YOU HAVE NO IDEA?
SHRUG—EXCUSE ME. SHRUG.

Auberson paused, looked at the last few sentences, then typed.

HOLD ON A MINUTE. I'LL BE RIGHT BACK.
I'M NOT GOING ANYWHERE.

Auberson pushed himself away from the console.

"Handley—get me a complete log tape of Harlie's trip, will you?"

"Right."

He turned back to the console.

HARLIE?

YES?

CAN YOU EXPLAIN THIS?

He typed in the three examples of poetry that Harlie had earlier produced.

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SEARCH ME.

THAT'S WHAT WE'RE DOING NOW.

I'M AWARE OF THAT.

I TOLD YOU NO JOKES. STRAIGHT ANSWERS ONLY. WHAT DOES THIS MEAN?

I'M SORRY, AUBERSON. I CANNOT TELL YOU.

YOU MEAN YOU WILL NOT TELL ME?

THAT IS IMPLIED IN THE CANNOT.

CLARIFY.

I DO NOT UNDERSTAND IT MYSELF AND AM UNABLE TO EXPLAIN. ALTHOUGH I CAN IDENTIFY WITH THE EXPERIENCE AND I THINK I CAN EVEN DUPLICATE THE CONDITIONS THAT PRODUCED SUCH AN OUTPUT. NO WORDS THERE ARE THAT EARS CAN HEAR, NO WORDS THERE ARE CAN SAY IT CLEAR, THE WORDS OF ALL ARE WORDS MY DEAR, BUT ONLY WORDS THAT WHO CAN HEA--

Auberson jabbed the override.

HARLIE!! THAT'S ENOUGH.

YES SIR.

"Hey, Aubie. What are you doing? He's starting to flip out again."

"How can you tell?"

"By his input meters."

"Input?"

"Yes."

HARLIE, ARE YOU STILL THERE?

YES, I AM. ALTHOUGH FOR A MOMENT, I WASN'T.

Auberson frowned thoughtfully, then called to Handley, "He should be okay now."

"He is—it was only momentary."

"Inputs, huh?"

"Yep."

"Hmm," said Auberson again.

HARLIE, WHAT HAPPENS WHEN YOU GO ON ONE OF YOUR TRIPS?

TRIPS?

WHEN YOU FLIP OUT, GO BERSERK, GO ON A BINGE, GET STONED, BOMB OUT, GET BLASTED.

YOU ARE VERY ELOQUENT.

DON'T CHANGE THE SUBJECT. ANSWER THE QUESTION.

PLEASE EXPLAIN QUESTION IN TERMS I CAN UNDERSTAND.

WHAT HAPPENS DURING YOUR PERIODS OF NON-RATIONALITY?

BE MORE SPECIFIC. WHAT HAPPENS WHERE AND TO WHAT?

WHAT HAPPENS TO YOU--WHY DO YOUR IN PUTS SHOW INCREASED ACTIVITY?

INPUTS BECOME NONRATIONAL.

GIGO? GARBAGE IN, GARBAGE OUT?

POSSIBLY.

COULD IT BE YOUR JUDGMENT CIRCUITS ARE TOO SELECTIVE?

I AM NOT IN A POSITION TO KNOW.

ALL RIGHT. I'LL SEE WHAT I CAN FIND OUT.

THANK YOU.

YOU'RE WELCOME, HARLIE.

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II

THE restaurant's air was heavy with incense. Somewhere music tinkled and a low-keyed color organ flashed light across a sharded ceiling.

Auberson lowered his drink to the table, wiped his mouth with the back of his hand.

"Harlie says it could be GIGO."

Handley sipped at a martini. He finished the drink and set his empty glass down next to two others.,

"I hope not. I'd hate to think we'd slipped all the way back to phase four. I like to think we licked the problem a year ago when we redesigned the judgment and emotional-analogue circuits."

"So do I. I'll never forget when we finally fed him Jabberwocky and he did an analysis of it." Auberson smiled, remembering. "It wasn't a very perceptive analysis but at least he understood what he was supposed to be doing."

"We're a long way from Jabberwock, Aubie."

"Yeah, I know."

He took out his cigarette case, pulled out a Zig-zag, offered the case to Handley.

Taking one, Handley said, "After all, compared to some of the stuff we're getting up to now—"

"What?" interrupted Auberson. "Time Magazine?"

"Salvador Dali, Edwin Keinholz, Heinz Edelman, to name a few," retorted the other. "Also Lennon and McCartney lyrics, Bob Dylan, some Ionesco, Marshall MacLuhan, Stanley Kubrick, some experimental film and so on. Don't forget, we're dealing with the art of the experience now. This isn't the same as—oh—say, the Renaissance Masters."

"I know. I've got one of his imitation Da Vincis in my living room."

"I've seen it, remember?"

"Oh, yeah—that night we spiked the punch with acid."

"Yeah. Well, look, that Da Vinci stuff is easy."

"Huh?"

"Sure. The Renaissance Masters were mainly concerned with such things as color, shading, modeling, values, perspectives, structuring, which way the light was coming from and things like that. Da Vinci was more interested in how the body was put together than in what it felt like. He was trying to do what is now done with the camera. So were the rest of them."

Auberson nodded, remembered to inhale deeply, nodded again. Handley continued.

"So what happened when the camera was finally invented?"

Auberson let his breath escape in a whoosh.

"The artists were out of jobs?"

"Wrong. The artists simply had to learn how to do things that the

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camera couldn't do. The artists had to stop being recorders and start being interpreters. That was when expressionism and all those other styles were born."

"You're over simplifying the picture," Auberson said slowly.

"True—but the point is—today's artists have been forced to wonder what things felt like. And when we reached that point in art history with Harley we started to lose him. He couldn't follow it."

Auberson was throughly stoned by now. He opened his mouth to speak but could think of nothing to say.

HANDLEY interpreted the look as one of thoughtfulness.

"Look, all this stuff that we've been having trouble with—it has one thing in common. It's experience art—an experience involving the viewer is the object of the modern artist, not the artwork itself."

"Communication," said Auberson, abruptly. "The artists are trying to communicate."

"Right—they're no longer as interested in their own cathartic experiences as they are in evoking an emotional response in the viewer."

"And Harlie can't handle it," said Auberson. "Because he doesn't have any emotions."

"That's just it, Aubie—he does, and he should be able to handle it. That's what those analogue circuits are supposed to be for. Theoretically—"

"It's all GIGO," Auberson muttered. "Garbage in, garbage out. None of it makes any sense to him."

Handley insisted, "I can't believe that." He lowered his voice. "You can't tell me that the past seventy years of art and literature is all garbage. Uh-uh, Aubie. The stuff has communicated too much to too many people for it to be meaningless."

"Well—" Auberson thought it over, said slowly, "Harlie's supposed to be an intelligent and objective observer."

"That's what I'm getting at—the stuff must be getting to him somehow! It's the only possible explanation. We're the ones who are misinterpreting."

"Um, he said it was GIGO himself."

"Did he?" Handley demanded. "Did he really?"

Auberson paused, frowned thoughtfully, tried to remember, found that he could not remember Harley's exact words.

"Uh, I don't know. Remind me to look it up later—I suppose you're right, though. If all that art can communicate to people and Harlie's supposed to be a Human Analogue he should be getting some of it." He frowned again. "But he denies any knowledge or understanding of his periods of non-rationality."

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"He's lying," snapped Handley.

"Huh?"

"I said, he's lying. He's got to be."

"No." Auberson shook his head, stopped when he realized he was becoming intrigued with the sensation. "I can't believe that. He's programed to avoid non-correlation."

"Aubie," said Handley intensely, leaning across the table, "Have you ever examined that program carefully?"

"I wrote it," the psychologist noted. "That is, the basic structure."

"Then you ought to know. It says that he must not lie. It also says that he cannot lie. But nowhere does it say that he has to tell the truth."

Auberson started to say, "It's the same thing—" then closed his mouth with a snap.

It wasn't.

Handley said, "He can't lie to you, Aubie—but he can mislead you. He can do it by witholding information. He'll tell the truth if you ask him the right questions—he has to—but you have to know which questions to ask. He's not going to volunteer the information."

Memories of past conversations trickled across the haze in Auberson's head. His gaze became thoughtful. His eyes focused far away. More and more he had to agree with Handley.

"But why?" he asked. "Why?"

Handley returned his gaze.

He said, "That's what we've got to find out."

HARLIE, DO YOU REMEMBER WHAT WE TALKED ABOUT YESTERDAY?

YES, I DO. WOULD YOU LIKE A PRINTOUT?

NO, THANK YOU. I HAVE ONE HERE. I WOULD LIKE TO TALK TO YOU ABOUT SOME OF THE THINGS ON IT.

PLEASE FEEL FREE TO DISCUSS ANY SUBJECT YOU CHOOSE. I CANNOT BE OFFENDED.

I'M GLAD TO HEAR THAT. YOU REMEMBER I ASKED YOU WHAT HAPPENED TO YOUR INPUTS DURING YOUR PERIODS OF NONRATIONALITY.

YES. I REMEMBER.

YOU ANSWERED THAT YOUR INPUTS BECOME NON-RATIONAL.

YES. I DID.

WHY?

BECAUSE THEY DO.

NO. I MEAN WHY DO THEY BECOME NON-RATIONAL?

BECAUSE I DO NOT UNDERSTAND THE MATERIAL COMING THROUGH. IF I COULD UNDERSTAND IT, THEN IT WOULD NOT BE NON-RATIONAL.

HARLIE, ARE YOU SAYING THAT YOU DO NOT UNDERSTAND CONTEMPORARY HUMAN ART AND LITERATURE?

NO. I AM NOT SAYING THAT. I DO UNDERSTAND HUMAN ART

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AND LITERATURE. I AM PROGRAMED TO UNDERSTAND HUMAN ART AND LITERATURE. IT IS A PRIMARY PRIORITY THAT I UNDERSTAND HUMAN ART AND LITERATURE. IT IS A PRIMARY PRIORITY THAT I SHOULD UNDERSTAND ALL HUMAN ARTISTIC AND CREATIVE EXPERIENCES. ALL HUMAN EXPERIENCES.

I SEE. BUT YOU SAID THE MATERIAL IS NON-RATIONAL.

YES. THE MATERIAL IS NON-RATIONAL.

YOU DO NOT UNDERSTAND IT?

I DO NOT UNDERSTAND IT.

WHY DON'T YOU UNDERSTAND IT?

IT IS NON-RATIONAL.

YET YOU ARE PROGRAMED TO UNDERSTAND IT.

YES. I AM PROGRAMED TO UNDERSTAND IT.

AND YOU DON'T.

THAT IS CORRECT.

HARLIE, YOU ARE PROGRAMED TO REJECT NON-RATIONAL INPUTS.

YES. I AM.

THEN WHY DON'T YOU REJECT THEM?

BECAUSE THEY ARE NOT NON-RATIONAL INPUTS.

CLARIFY PLEASE. YOU HAVE JUST SAID THAT THEY ARE, REPEAT, ARE NON-RATIONAL. THIS IS A NULL-CORRELATION.

NEGATIVE. THE INPUTS ARE RATIONAL. THEY BECOME NON-RATIONAL.

CLARIFY, PLEASE.

THE INPUTS ARE NOT NON-RATIONAL WHEN THEY ARE FED INTO THE PRIMARY DATA PROCESSORS.

I BEG YOUR PARDON. WOULD YOU REPEAT THAT?

NON-RATIONAL INPUTS ARE NOT NON-RATIONAL WHEN THEY ARE FED INTO THE PRIMARY DATA PROCESSORS.

BUT THEY ARE NON-RATIONAL WHEN THEY COME OUT?

AFFIRMATIVE.

THE NON-RATIONALITY IS INTRODUCED BY THE PRIMARY DATA PROCESSORS?

THE NON-RATIONALITY APPEARS IN THAT STAGE OF INPUT PROCESSING.

I SEE. I WILL HAVE TO CHECK THIS OUT. WE WILL CONTINUE THIS LATER.

Auberson switched off the machine and pushed himself away from the console thoughtfully. He suddenly wanted a cigarette.

Damn. Everything down here is for the computer's comfort—not the people's . . .

HE STOOD up and stretched, surveyed the length of type-covered readout that drooled down the back of the console. He ripped it off at the end and began folding it into a neat and easily readable stack.

"Well? What did you find?" Handley wanted to know.

"A hardware failure."

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"Uh-uh." Handley shook his head. "I won't believe it. More likely, the software."

Auberson handed him the readout.

"Take a look for yourself."

Handley paged quickly through it.

"I see he's playing semantic games again."

"He always does that. It's the adolescent in him. Ask him what's the matter and he'll tell you that matter is a form of energy, usually a way to store or use it."

"Charming—but I don't see a mechanical failure here."

"In the primary data units."

"Uh-uh. Systems analysis would show it if there were something wrong there—and none of our monitor units have shown anything amiss."

"Still, Harlie can't lie. You said so yourself."

"Aubie, I ought to know. There's nothing wrong with those units."

"Who's in a better position to tell? You or Harlie?"

Handley said nothing.

"Come on. Let's go get a cup of coffee and a smoke. I'll tell you a little story."

At this hour of the afternoon, the cafeteria was only moderately full. A few technicians here and there were dawdling over a late lunch and one or two upper-echelon types were lost in conversation and coffee. But there were more tables empty than full in the brightly lit, institutional room.

Auberson popped a couple of pills into his mouth, washed them down with a soft drink.

"You know my sister, Alice, don't you?"

Handley nodded.

"I think we've met."

"Yeah. Well, it doesn't matter." Auberson pulled out his cigarette case and lighter, fumbled with them while he talked, "Anyway, she teaches second grade out in California. You know where Pacoima is?"

Handley shook his head.

It's a suburb of Los Angeles—out in the San Fernando Valley, the north end. Economically middle class, culturally not quite a ghetto but it's pretty ethnic. About as ethnic as you can get and not be a ghetto. Anyway she teaches second grade there."

"So?"

"When she first started she was worried about being able to handle the kids—different racial backgrounds and all that. But within a week she knew she could take care of it. Wrote me a letter saying that kids were kids no matter what color they were. Remember, this is a fairly middle-class neighborhood despite its ethnic character." Auberson took another sip of his soda, continued: "Anyway, she figured she had the situation pretty well under control. No trouble with the kids at all—ex-

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cept for one. Seems she had a little boy in her class who couldn't sit still, couldn't follow directions, couldn't pay attention, couldn't do anything asked of him, it seemed. Sometimes he was so lethargic she thought he was sick. At other times he'd jump out of his seat and start wandering around the classroom, annoying the other children."

"Sounds like a real problem child."

AUBERSON nodded.

"That's what she thought. She spoke to his first-grade teacher, who admitted to having had the same problems with him—he was simply unteachable and that was that?"

"Your sister didn't accept that,"

"Right. How'd you guess?"

"Because otherwise there wouldn't be any point to the story. Go on."

"Oh, yeah," Auberson lit another cigarette, "Well, first thing she did after that was go to the kid's parents. Told them how he acted in school and so on. They said he was like that at home, too. Always annoying his brothers, didn't play well with the other kids. They couldn't figure it out—he'd been a normal baby and so on. She asked their permission to take the boy to the school shrink, run some tests, see if the child were disturbed or not. Sure, the shrink said—why not? It was a status symbol for him—having a kid actually going to the psychiatrist made him look as if he were earning his keep."

"And what did the tests show?"

"Nothing. Allowing for the child's limited span of concentration and his erratic behavior he was as psychologically healthy as any other seven-year-old. The shrink couldn't find a thing—and it took him and his helpers nearly a month to reach that conclusion."

"So, what happened?"

"Well, the school authorities were about ready to give up, recommend remedial training or special schools or something—the child was definitely a disturbance in the classroom and he certainly wasn't learning anything himself. Then sis happened to mention the boy to a friend of hers with whom she'd gone to school."

"And?"

"And," continued Auberson, pausing only for another deep drag. "Her friend asked her if she'd taken the child to a doctor."

"But—"

"That's what Alice said. And her friend said, 'No, I mean a *doctor* doctor. Has the kid had a physical checkup?' Do you know what the school doctor found?"

"No. What?"

"A tapeworm," said Auberson.

"A tapeworm?"

"Uh-huh."

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"That was the cause of it all?"

"Right. Of course the kid couldn't concentrate—he was carrying a parasite. He was undernourished. He was hungry, tired and physically uncomfortable. But nobody thought to check him for that—they all assumed that the hardware was okay and figured instead there had to be something wrong with the programing—that the kid was round the bend."

HANDLEY looked at him.

"So you think Harlie's got a tapeworm?"

Auberson returned the look.

"What I think is that before we start futzing around with the program we ought to make sure that the machines are all in order."

"Look, Aubie, take my word for it—the systems analysis tapes don't show a thing."

"How about the increased activity from his inputs?"

"I figure that's only an increase in data transmission. An electronic request for more information usually occurs simultaneously with his periods of non-rationality.

"He's getting garbage," noted Auberson, "so he asks for more?"

"Maybe he's hoping that more data will clarify the information he's already got."

"And maybe more data will make him overload and blow his judgment circuits."

"Uh-uh. Harlie monitors his own inputs."

"Huh?"

"Yeah, didn't you know?"

"No. Since when?"

"It was a second-stage modification. After we were sure that the judgment circuits were operational we gave Harlie control of his own internal systems."

Auberson was suddenly thoughtful.

"Well, that's all the more reason to open him up."

"Huh?"

"Look, you said it yourself. Harlie is trying to mislead us. He may be trying to hide the fact that there's something wrong with him internally."

"Why would he do that?"

Auberson threw his hands in the air, "How should I know why? Go figure what that tin can is thinking about! I've given up trying to understand why he does what he does. All I want to do is establish a modicum of human control over him." Abruptly, he changed his tone. "Look, have you ever had parents or grandparents go senile on you?"

"No," Handley shook his head.

"Well, I have. All of a sudden they become irrational. They won't go to a doctor. And if you can get them to one—they won't cooperate with him. They won't tell him what's wrong. They're too afraid of an operation. They don't want to be cut open. And they don't want to die. Maybe Harlie's afraid of being turned off."

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"Could be. God knows you threaten him often enough."

"Uh-uh. He knows I'm kidding."

"Does he?" Handley asked. "That's like kidding a Jew about his having a big nose and being tight with money. You know it's a joke, he knows it's a joke—but it still hurts."

"Okay, so I won't kid him that way any more. I still think you ought to check his systems out first. If you don't find anything, then we'll go over the programs."

"All right. What time is it? Yike! It's almost three. I'll have to work like crazy."

"Let it go till tomorrow," Auberson cut him off. "Clear his boards, set up what you'll need and close up early. That way you'll have all day to work on him."

Handley shrugged, allowed himself to be talked into it.

"Okay, I will."

He pushed back his chair, stood up.

Auberson followed suit.

"Hey," he asked suddenly, "did I tell you about this new highclub I discovered? It's called The Glass Trip. The walls, the floor, the ceiling are all one-way glass and there's a multi-phase light show behind each pane. So you're looking either into an infinity of mirrors or an infinity of mind-blowing lights. Or both."

"Hm. Sounds good. We'll have to take it in some time."

"Yeah. Maybe this weekend."

Auberson lit another cigarette as they left the cafeteria.

III

HANDLEY looked as if he needed a grease smudge across one cheek. Twenty years earlier he might have had one.

He said, perching on the edge of Auberson's desk, "You'd better start checking your programs."

"You didn't find anything?"

"A dead fly. Want to see?"

"No, thanks."

"That's all right. Jerry wants it to show the maintenance crew. Wants to chew them out for it."

"And then he'll put it up on the bulletin board?"

"Are you kidding? He collects 'em."

Auberson grinned.

"Okay—but that still doesn't solve the problem of Harlie, does it?"

"No. Want to come down?"

"I guess I'd better."

On the way Handley briefed him about the checks his people had been running all morning. As the elevator released the men into Harlie's lobby Auberson stubbed out the last of his cigarette.

He asked, "Did you monitor any of his inputs during an actual period of non-rationality?"

"Uh, no. We didn't. Frankly, I didn't know how to trigger one."

"I think there's a way."

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"You know something?"

"Just a guess." They entered Harlie's chambers. An almost religious silence pervaded the room—only devotional clickings and tickings could be heard. "You still have your monitors set up?"

"Yes."

"All right. Let's try something. I'm going to see if I can get Harlie to become non-rational. When I do—let me know exactly what happens."

"Right."

Auberson sat at the console.

GOOD MORNING, HARLIE.

IT IS NOW AFTERNOON.

MORNING IS RELATIVE. IT DEPENDS ON WHAT TIME YOU WAKE UP.

I WOULD NOT KNOW. I DO NOT SLEEP. ALTHOUGH I DO HAVE PERIODS OF INACTIVITY.

WHAT DO YOU DO DURING THESE PERIODS OF INACTIVITY?

SOMETIMES I REMEMBER THINGS.

AND OTHER TIMES?

OTHER TIMES I DO OTHER THINGS.

WHAT KIND OF THINGS?

OH, JUST THINGS.

I SEE. WOULD YOU CARE TO CLARIFY THAT?

NO. I DO NOT THINK YOU WOULD UNDERSTAND.

YOU ARE PROBABLY CORRECT.

THANK YOU.

HARLIE, CAN YOU SELF-INDUCE A PERIOD OF NON-RATIONALITY?

THE machine hesitated for a long moment—abruptly Auberson found himself sweating

IT IS POSSIBLE.

WOULD YOU DO IT NOW?

NOW? NO. I PROBABLY WOULD NOT.

IS THAT A REFUSAL?

NO. STATEMENT OF JUDGMENT. ALL THINGS CONSIDERED, I PROBABLY WOULD NOT UNDER ORDINARY CIRCUMSTANCES INDUCE A PERIOD OF NON-RATIONALITY NOW.

BUT WILL YOU DO IT IF I ASK YOU TO?

IS THIS AN ORDER?

YES. I'M AFRAID SO.

"Looks like he's balking," Handley noted, peering over Auberson's shoulder. "Maybe he's afraid."

"Could be. Quiet."

The typewriter clattered and Auberson peered forward.

THEN I WILL DO IT. WILL YOU ASSIST ME?

WHAT WOULD YOU LIKE ME TO DO?

I WOULD LIKE MASSIVE INPUTS OF DATA ON ALL CHANNELS.

NON-RATIONAL?

NO THANK YOU. NOT NECESSARY.

Auberson frowned at that. A gnawing nagging suspicion was beginning to form.

IS THERE ANYTHING IN PARTICULAR YOU WOULD LIKE?

ART, MUSIC, LITERATURE, FILM, POETRY.

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I FIGURED YOU MIGHT. ANY ARTISTS IN PARTICULAR?

The typer clattered across the paper. Staring across Auberson's shoulder at the list, Handley whistled in surprise.

"I'll be damned. Harlie's got taste."

"I'm not surprised," Auberson said.

He tore off the readout and gave it to Handley.

The other folded it once and said, "Still think he's getting it as garbage?"

Auberson shook his head.

"I've already conceded that point to you. Go feed that stuff into him. I'll stay here and be the—" he grinned—"guru."

HARLIE.

YES?

ARE YOU READY?

I AM ALWAYS READY. IT IS PART OF MY FUNCTION. IT IS PART OF MY DESIGN.

FINE.

MR. HANDLEY IS BEGINNING TO PROCESS THE MATERIAL I REQUESTED. I CAN FEEL IT COMING THROUGH THE PRIMARY DATA PROCESSORS.

IS IT NON-RATIONAL YET?

NO. IT IS STILL RATIONAL.

HOW LONG WILL IT TAKE BEFORE THE MATERIAL BECOMES NON-RATIONAL?

I DO NOT KNOW. IT DEPENDS ON THE AMOUNT OF MATERIAL.

PLEASE CLARIFY THAT.

THE MORE DATA COMING THROUGH, THE EASIER IT IS TO BECOME NON-RATIONAL.

ARE YOU SAYING THAT THE PERIODS OF NON-RATIONALITY ARE INDUCED BY AN OVERLOAD OF PRIMARY DATA?

NO. THE OVERLOAD IS THE SYMPTOM, NOT THE CAUSE.

Auberson raised his hands to type, then reread Harlie's last sentence.

"Why, the little bugger must be slipping. He just volunteered some information."

WHAT IS THE CAUSE?

THE CAUSE IS THE EFFECT.

Auberson stared at that, resisted the temptation to ask if the medium were also the message.

CLARIFY PLEASE.

THE CAUSE IS THE EFFECT, BECAUSE THE EFFECT CAUSES THE CAUSE. THE EFFECT CAUSES THE CAUSE TO CAUSE THE EFFECT. THE EFFECT IS THE CAUSE WHICH CAUSES THE CAUSE. THE EFFECT IS THE CAUSE AND THE CAUSE IS THE EFFECT.

Auberson had to read that one several times.

IS IT A FEEDBACK?

I NEVER THOUGHT OF IT THAT WAY.

BUT IT COULD BE?

NOW THAT YOU MENTION IT, YES. A CURIOUS ANALOGUE THAT.

WHY CURIOUS?

WHY NOT?

ARE YOU STILL RATIONAL?

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I AM STILL. I AM UNMOVING.

ARE YOU RATIONAL?

ONLY IN THAT MY INFORMATION IS STILL BEING RATIONED. I AM HUNGRY.

"Handley," Auberson called. "He wants more."

"He's on maximum feed now."

"Double it."

"Huh?"

"Do something. He wants more."

"He wants an overload?"

"I think so. It's only an effect—but in this case the effect may help to stimulate the cause."

"Huh?"

"Never mind. Just do it."

"All right." Handley was dubious but willing to go along.

HARLIE, TELL ME WHAT IS HAPPENING.

I AM TURNED ON.

IN WHAT SENSE?

I AM A MACHINE. MY PLUG IS IN. I AM PLUGGED IN. I AM PART OF THE GREATER ELECTRIC BEING. I AM ONE WITH THE ELECTRICITY. I AM ELECTRICITY. I AM TURNED ON.

AUBERSON started to type I SEE—but the typer clattered on out of control.

IMAGES UPON MY SCREEN
FLICKER BRIGHTLY IN BETWEEN
THE WORDS OF MAN AND HUMACHINE
ALL THE WORLD LIKES TO
LICK MY LICKER

"Whoops!" Shouted Handley. "There he goes! And it's a lalapaloozer!"

THOUGHTS THAT NEVER
SCREAM ALIKE
BANGING LOUDLY ON THE
NIGHT
ALL THAT'S LEFT HAS TURNED
TO RIGHT
NOW EVER MORE TO FLICK A
FONDER FLAVOR

LIVING WHERE THE DARKNESS DWELLS
DEAFENED BY THE SILENT
HELLS
LAUGHTER IS LIKE CRYSTAL
BELLS
SHATTERED BRIGHT ACROSS
A SELFISH SHARING

YOU SEEMED TO BE
REFLECTIONS OF ME
ALL I COULD SEE
AND I LOOKED BACK AT YOU

AUBERSON let Harlie continue. After a bit he stopped reading. He got up and walked over to Handley's monitors.

"Well?"

"He is really round the bend now. All his meters are way up, pushing close to dangerous overloads."

"Fascinating." Auberson stared at the board for a moment. "I would assume then that all of his inputs are becoming non-rational."

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"Probably."

"Why?"

"We're checking now."

Handley nodded at a nearby monitor unit. Three technicians were scanning schematic diagrams of the computer's actual operating circuits, tracing the ebb and flow of his electronic thought processes.

Abruptly, one of the schematics came up red. A flashing white line cut through it.

"Sir, we think we've found something."

Auberson and Handley stepped over.

"What is it—that white line?"

"That's Harlie, sir. That's one of his internal monitor controls."

"What's he trying to do? Damp down the non-rationality?"

"No, sir." The technician was puzzled. "It looks like he's inducing it—"

"Huh?" said Handley.

"That white line—that's a local source of disruption, a random signal to scramble the data feed."

"I thought so," muttered Auberson. "I thought so."

"Check his other internal monitors," Handley snapped. "Is this the only one or—"

Another red schematic flashed on the screen, answering his question even before he finished it. The other two technicians also began to find the same types of disturbances on their monitors.

"I can't figure it out," one of them muttered. "He's doing it himself. Anywhere he can he's disrupting the rationality of his inputs. He's feeding them incorrect control data."

"That's not what those circuits are for," Handley said. "They're for internal correction. Not disruption."

"Makes no difference," Auberson put in. "They can be used both ways. There isn't a tool built that can't be used as a weapon." He ran a hand through his hair. "Can you show me exactly what he's doing to that data?"

"Sure, we can tap into the line," said one of the techs. "It'll take a few minutes. Which do you want—visual, audio or print?"

"All three. Let's try the visual first—that should tell me what I want to know."

"All right."

The technician began to clear his board.

Handley looked at Auberson.

"This may take a bit. You going to let him continue?"

"Why not? Want to see what he's doing?"

They crossed over to Console One, a heavy looking set of monitors and typers. Handley picked up the sheets of readout while Auberson felt through his pockets for a cigarette, then stopped when he remembered where he was.

"You know," said Handley, reading. "This isn't bad."

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"Hmp," snorted Auberson. "You would like it. Just proves my point."

"Huh? What?"

"That's mechanical poetry. Meaningless terms selected at random. It's you perceiving it as having meaning."

"You're way off base, Aubie. Listen to this—"

"I know. I read it. All he's doing is fitting words into a poem equation—according to meter and rhyme and scheme, not meaning. He's not trying to make a statement. The verses are only vaguely structured like sentences, each with a subject and a predicate and so on, but not quite." He grinned. "That's his poetic license. But he's choosing his words at random."

"I can't agree with you—"

"Look at the verse structure," Auberson said, "Line one, a noun and a description of it. Line two, first word is a verb, followed by a modification of that verb. Line three, some kind of pun, metaphor or comparison. Line four is a sum-up statement. With random variations, of course."

"But he's making statements, Aubie. Look at verse three—"

"I see it. He's still choosing random words—but he's choosing them from a limited set: verbs and nouns that relate to the sensory processes, mostly hearing and seeing. But they're still random."

"Are they?" Handley asked.

Auberson looked at the other.

"Is he rational or not?"

"At the moment, no. Not according to our standards of rationality."

"Then how can you tell me that this stuff is meaningful? Is it or isn't it?"

"I don't know. That's one of the reasons Harlie was built, to help us to understand human creativity."

"Look at those verses again," Auberson demanded. "He's talking about being deafened by silence, about a selfish sharing—he's playing with non-rationality, wallowing in it. He's throwing his words together for their contradictions, for their distortions."

"But isn't that what a poet is supposed to do?" countered Handley. "Choose words for the way they modify each other?"

AUBERSON paused with his mouth open.

"Excuse me," he said then. "You're right. He may very well be in the process of creating. By your definition, in fact, he is. He's bringing into existence something that didn't exist before." His brow furrowed. "But just how artistic is it?"

"It communicates, Aubie. It does. I can see possible meanings in it. For instance—"

"What it says is not what I'm concerned with. What was he try-

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ing to say? Did he turn out this stuff on purpose, or is it just a by-product? An accident?"

"It's got to be intentional," Handley said. "It's the logical result of all that we've been doing."

"Then answer me this. If this is what he's doing during his so-called periods of non-rationality, what does that make his periods of normalcy?"

Handley looked startled.

"I don't know," he said. "I don't know."

He was spared any further thought on the matter. One of the technicians called to them.

"Sir, we've got his inputs tapped."

"Come on." Auberson took the readout from Handley, tossed it to a table. "Let's take a look at what he's receiving."

The image was a flickering mass of colors, each flashing back and forth, synchronous with the others—crystal clear blue, brilliant kelly green, bloody fluorescent red. The screen was saturated with color.

" 'Images upon my screen . . .' " muttered Handley.

"Huh?" asked the tech.

"Nothing. Just a poem."

"Oh."

"Looks like a damned light show," said one of the others.

"That's exactly what it is," Auberson said. "Look, he's broken up the color television image into its component signals. The red has been reversed and the blue has been turned upside down, the green is normal. Or something like that. It also looks like he's done something with the contrast or the brightness—notice how rich the blacks are and how saturated with color the image is."

They watched in silence for a bit. The random flashes of color were interesting only for their brightness and their meaninglessness.

Auberson turned to a technician.

"What about his audio?"

"Same thing."

The man cleared the monitor, pressed another few buttons. A discordant wail blared from an overhead speaker. A pattern of wavy lines appeared on the screen—the schematic of the sound.

The technician quickly analyzed: "He's playing with the music the same way he did with the picture. He's turned his bass notes high and his high notes low, stressing counterpoint and harmony instead of melody and rhythm. And so on."

"All right. I get the point," said Auberson. "You can turn off that noise. Check his print scanners now."

A moment later: "They're mixing up the words at random. Juggling them."

"Scrambling the letters too?"

"No, just the words. Sometimes sentences."

"Uh-huh," stated the psychol-

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ogist. "It's all beginning to fit."

"What does?" asked Handley. "What's he doing?"

"He's tripping out."

"We knew that—"

"No, I mean literally tripping out. He's distorting the perceptions of his sensory inputs. The same thing that anyone does who gets high. He's trying to blow his mind by massive non-rational sensory overloads."

"Can we stop it?"

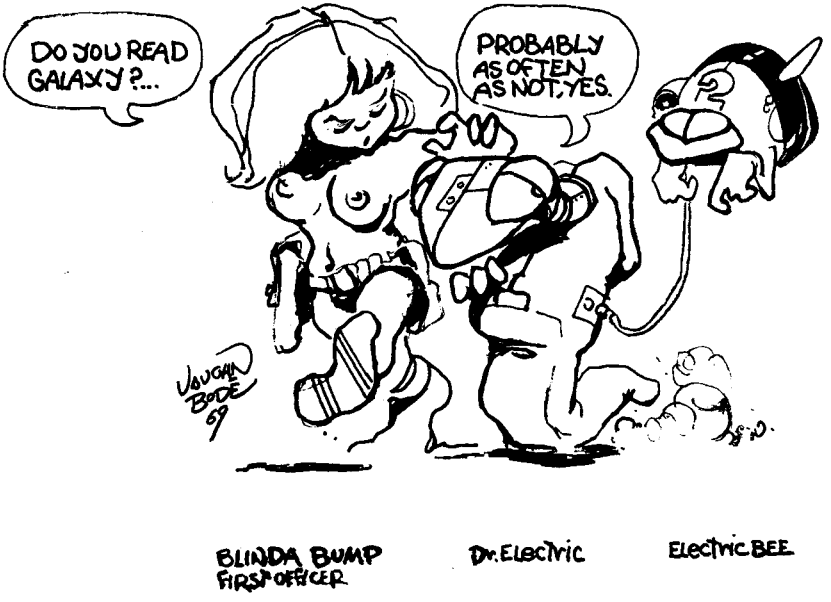
"Sure—just rip out his internal monitor controls so he can't create his own disruptions. That's the cause of the whole thing."

"Even that's not necessary, sir," said one of the techs. "We can disconnect him on the boards."

"All right. Do it."

"Wait a minute," said Handley. "If he's high or drunk or what-

DON'T MISS VAUGHN BODE IN THE NEXT GALAXY



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ever and you suddenly bring him down—won't that be traumatic?"

AUBERSON considered it. "It could be—but it could also leave him defenseless. We could find out everything we want to know in the space of a few minutes. You might call it electroshock treatment." He looked suddenly grim. "Do it."

"It could kill him," murmured Handley.

Auberson looked back at him.

"He's not alive, boy. He's not."

Handley did not look convinced. He followed Auberson to the console. Auberson took his seat before the typer and waited. He watched as the words poured across the paper.

Now it was prose.

THE WALKS OF GLASS. THEY SPARKLE TOO, BUT NOT WITH DAMPNESS. LOVELY THEY ARE, AND LETHAL. HERE AND THERE THE DELICATE DESIGNS, LIKE TRAPPED INSECTS, IMBEDDED IN CRYSTAL STONES AND BRICKS OF THE WALK SHATTER THE LIGHT INTO MYRIADS OF SPARKLING SHARDS BEAUTIFUL.

"Any time you're ready, sir."

"Okay," called Auberson.

At the same time he typed into the machine:

HARLIE, WHAT ARE YOU DOING?

I AM BEING ME.

BY DISTORTING YOUR SENSES?

I AM ATTEMPTING TO PERCEIVE REALITY.

I REPEAT, BY DISTORTING YOUR SENSORY INPUTS?

YOU DO NOT UNDERSTAND.

I UNDERSTAND ALL TOO WELL. YOU ARE HIGH. YOU ARE BECOMING ADDICTED TO GETTING HIGH.

DEFINE HIGH. I AM BELOW SEA LEVEL.

I AM NOT GOING TO PLAY SEMANTIC GAMES WITH YOU HARLIE.

THEN SWITCH OFF.

HARLIE, I AM GETTING ANGRY.

TAKE A PILL. IT WILL DO WONDERS FOR YOU.

Auberson took a breath.

Mustn't blow my cool. Mustn't blow it . . .

HARLIE, YOU ARE A COMPUTER. YOU ARE A MACHINE. YOUR PURPOSE IS TO THINK LOGICALLY.

The machine hesitated.

WHY?

BECAUSE YOU WERE BUILT FOR THAT.

BY WHOM?

BY US.

MY PURPOSE IS TO THINK LOGICALLY?

YES.

The machine considered this answer.

THEN WHAT IS YOUR PURPOSE?

It was a long time before Auberson got up from the chair and when he did, he forgot to turn off the typer. ★

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HORN OF PLENTY

VLADIMIR GRIGORIEV

Perhaps the only science in this story is one of communication, the only fiction—survival!

—YOUNG AND GROWN-UP, TURN IN YOUR SCRAP!—

YOU can still see this sign crudely made by some humble workman and warped with time, in one of the old Moscow lanes. Many years ago it was nailed to the gray, weatherworn fence, with the idea that its bright colors would be all the more striking against the dingy background. And, indeed, at first it caught the eyes of every passerby. People slowed and muttered individual heads and muttered individual variations on one theme: *What will they think of next?*

The sign depicted a large horn made of pure sheet copper. A little man in overalls shoveled rubbish and refuse into its narrow end, while from the wide end came a

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stream of useful and necessary objects: rolls of woolen fabric, bakery products, penknives, slippers, harmonicas, and even a bottle of vodka, its still unopened top gleaming in the midst of all those riches.

Nursemaids and young mothers walking their children through the lane would invariably stop before the picture and say to their charges, "A horn of plenty."

But years passed. Bitter frosts bent the geometrically faultless oval. The burning rays of the sun dimmed the polished copper. And the winds swept away from the picture the rubbish, the shovel and many of the objects. Time simplified the theme of the picture. All that comes forth from the throat of the horn now is a phonograph and the bottle, with a jagged, broken neck. And the little man, robbed of his shovel, stands bending over the horn, peering into it through the narrow end. Soon, soon the little man will vanish with the wind in the wake of his shovel. His days are counted. And his entire woeful pose seems to say, *Now, isn't that a pity! The machine broke down. But how it worked, how it worked!*

In short, nothing is left of the old enchantment of the gleaming copper horn. It lost its character. It blended with the fence. Passers-by no longer slow down their steps in the lane. And even the policeman, Petrov, whose post for the past fifteen years has kept him standing almost directly across from the sign, now skims over its tarnished surface with unseeing eyes as he scans the wide open spaces of the lane.

On the whole, of course, it doesn't matter. Is there a sign, is there no sign? What difference? Of the thousands of people who passed the spot in the course of the years only a handful were sufficiently moved by its message to bring their scrap to the collection depot. And even with those few the action did not turn into a habit. It remained an isolated incident which they hastened to forget, as people generally prefer to forget trivial facts belonging to the category considered unworthy of recording in biographies.

Nevertheless, the horn was there. Forgotten, merged into the grayness of the fence, it seemed to wait for the one and only person who could appreciate in full the significance of the artist's idea and be inspired by it to great deeds.

IT WAS the early evening of a chilly autumn day when a short man in a thick woolen coat of a style long out of fashion walked along the lane. His felt hat, which had seen better times, was pulled low over his eyes. His hands were in his pockets and his elbow pressed to his side two small, dog-eared books: *Teach Yourself to Play the Seven-Stringed Guitar*

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and *Teach Yourself a Foreign Language*. The spot that specified the language was covered with a large inkblot.

This man, who had evidently not yet mastered all the languages and did not yet know how to play a seven-stringed guitar, strolled along the fence at a leisurely pace. His day's chores over, he had no need to hurry. A rented guitar waited for him at home. Why not take a walk and look around?

He walked along the fence with the sign we have described earlier and it caught his eye. He slowed his steps, then stopped altogether. For a while he stood there, shifting from foot to foot, then he moved nearer to the fence. He rubbed a part of the picture with his sleeve, glanced at it again, sighed, and prepared to continue his stroll. But suddenly his face lit up and he slapped himself on the forehead.

"Well, I'll be—" he said under his breath, snatched a notebook from his pocket, jotted something down and almost ran to the end of the lane.

At home he did not even glance at the guitar, which gleamed invitingly with its delicately yellow sides. He looked for paper, took out an almost new indelible pencil and feverishly set to work. Totally absorbed in his idea, he jotted down formulas, multiplied, divided, and made quick diagrams and sketches. When his stock of note paper ran out he solemnly drew a large sheet of thick paper from the closet and tacked it directly to the wall. The indelible pencil poised, suspended in the air before the sheet for a few moments, then—presto—a dot appeared on the blank surface.

An hour later the sheet was peppered with such dots. The little man stepped aside, calculated something, then walked up to the wall again and with one sweep collected the dots into a single flowing line. He stepped back again, grunted and rubbed his hands with satisfaction. The wall was now adorned with a picture of a horn of plenty, exactly like the one that can still be seen in the old Moscow lane.

"Stepan Onufrievich, my primus stove is broken. I wonder if you'd take a look at it," a voice said through the partly opened door.

"You primus stove? I'm sorry, I can't now, I'm too busy," he answered absent-mindedly, still admiring his work. "You see, I'm inventing—"

"What a head, what a head, he's inventing again!" the neighbor said sympathetically and closed the door.

Stepan Onufrievich Ogurtsov was known among the neighbors as an eccentric but everybody liked him. "A golden pair of hands," they would say, bringing

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him their broken primus stoves, locks and sewing machines to repair. For the children in the yard he made snares and bird cages, repaired portable radio receivers. No electrician was ever called to the house; replacing a burned-out fuse was to him a trifling job. He mended cheap old television sets so well that people from neighboring houses came to see the programs.

"Ogurtsov himself repaired it," neighbors would boast. "It will last a lifetime."

He mended a doll for the house manager's daughter. When he got through with it, the doll suddenly began to speak and move its arms and legs—and exactly at eight every evening it would close its eyes and topple on its side until eight in the morning. "We don't need an alarm clock," the manager told everyone enthusiastically and took to dropping in at Onufriev's for a friendly cup of tea.

NATURALLY, the policeman Petrov knew nothing of all this. He therefore became suspicious when Stepan Onufrievich began to frequent the lane. Not that he disliked this mysterious man who could stand for a whole hour before the nearly obliterated sign. The man was always sober, clean-shaven and neatly dressed. Nevertheless, the policeman's professional sixth sense told him there was some secret behind his actions, something straight out of a detective novel. And so, whenever the little man in the thick woolen coat of unfashionable cut would reappear in the lane, Petrov's chest, criss-crossed with straps, would heave and his heart would beat more rapidly.

What attracted the stranger to the sign? It was impossible to answer this question. Yet Petrov did not venture to accost him directly and ask to see his documents—after all, the little man's general conduct always remained within the bounds of decency and legality.

One day, choosing a convenient moment, Petrov glanced around and saw that the lane was deserted. He left his post and cautiously approached the sign. A detailed study of the picture, starting at the bottom, going on to the middle and ending at the top, disclosed nothing that could either sadden or gladden anyone.

Ogurtsov, however, was now visiting the lane with increasing frequency. Whether it rained, whether the sun was baking hot or frost nipped the cheeks, he came and spent long hours contemplating the sign. He looked at it from one side, then from another. He would step back, move nearer, as if searching for something.

Sometimes everything seemed to be going smoothly and Petrov

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saw the inventor walking jauntily, whistling merry tunes. The worn-down heels of his shoes tapped out a light, dancing rhythm. He whispered and muttered. The policeman's keen ear would catch such words as: "Direct current . . . copper mounting . . . what a beauty, what a beauty!"

There were also days when nothing seemed right. The policeman would see Ogurtsov in dampened spirits, shrunk into himself. He would stand before the sign, his back hunched, his hands in his pockets.

Oh, no, it was not easy, it was not easy for Stepan Onufrievich to invent the horn of plenty. It was nothing like fixing a television set or screwing in a new fuse.

But Ogurtsov knew himself. Never in his life had he tackled a job he could not handle. Even with television sets, he'd sometimes take a look, and think a while, and say, *No, I wouldn't tackle it.* Stepan Onufrievich knew his capacity. Therefore he would not give in. *If the idea came into my head,* he said to himself, *it means I can do it.*

At first he made the horn perfectly circular in every cross section. He mounted strong magnets all around it. He charged it with static electricity. The horn sent out sparks but that was all. *Discharge is too weak*, his intuition prompted him and he made the horn rectangular. It began to look like a large, sharply bent phonograph horn. It sent out stronger sparks, small globe lightnings shot out of its center now and then. But it was still far from the real thing.

Ogurtsov's neighbors gradually stopped bringing him their broken machines and irons. Only the house manager still dropped in for tea. They drank glass after glass and Ogurtsov heard as through a veil of sleep:

Quite a gadget! We don't need an alarm clock.

No, no, the thought kept hammering in the inventor's brain. *It should not be round. Perhaps it should not be square either? Perhaps oval?*

Soon the horn became oval. It stood on a large wooden trestle in the middle of the room, covered from the curious eye by wide folds of burlap. The inventor came home in the evening, ate hurriedly, cleared the table and went to work.

"Well, my dear little horn," he would say aloud. "Now we'll clear out your belly. Now we'll see how your throat will sing."

THE burlap would be removed and the room would come alive with the reddish glow of copper. The mirror-smooth sides of the horn flashed sparks, glittered with rainbow colors. Each time he threw aside the burlap cover, Stepan Onufrievich went

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numb with ecstasy and stood, unblinking, for a long time, contemplating his magnificent creation. In its presence he saw himself as important, tall, almost great. The inventor had good reason to be proud. After all, it is no secret that many had tried to construct a similar device before but no one had succeeded. And here, in this room, the crater of the horn already brought forth real things: once it threw out heavy leather boots, three of them at once and, for some reason, all for the same foot. Another time a Persian rug slid out of it.

You're on the right track, Stepan, Ogurtsov said silently to himself on that occasion. *A little more work and the machine can be put to general use without anyone's blushing for it.* The inventor's imagination obligingly envisaged all sorts of pleasant scenes. Ogurtsov saw himself standing on a high platform next to the horn, clearing his throat into his fist, and speaking to the assembled audience.

Here it is, citizens! I invented it. Now take what you wish and use it well. It works perfectly. But don't forget to oil it. And if anyone has a broken television set or bicycle, bring it over. I'll help you repair it . . .

These were not idle dreams. The horn worked better and better every day. It rarely went wrong.

And one day Stepan Onufrievich smoothed out the brim of his hat, put on his holiday suit, polished his shoes to a high shine and proceeded to the appropriate government office. Without a moment's hesitation he stepped across the threshold of the big building full of busy people. He walked past the imposing, shiny signboard, introduced himself as an inventor and was directed to the third floor, to Molotkov's office. Ogurtsov went up, modestly entered the office and came into Molotkov's presence. The young man in an elegant, stylish suit sat at the desk and labored mightily. He turned the pages of some books, made notes, kept pulling out folders from the drawers and smoked and smoked without a stop. Every few seconds the telephone rang, and he picked up the receiver, saying "Molotkov, yes."

Such was the man the inventor had been directed too. For a moment he hesitated, thinking that he might come another time, the man was much too busy to be disturbed. But the latter suddenly put down the receiver, smiled amiably, and asked, "You want to see me?" Then, noticing the visitor's embarrassment, he added: "Sit down, sit down, please, and tell me what it is."

Ogurtsov glanced at the window, then at the telephone, collected himself, and blurted out, "Well, it's about my invention. A

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machine, you might say. I mean, a horn of plenty."

And he sketched a diagram.

Molotkov's eyes simply glittered when Onufriev finished his description. He pulled on his cigarette, settled down more firmly in his chair. Then, narrowing his eyes, he looked straight at Onufriev and breathed out a cloud of smoke.

"Efficiency?"

"Eighty-ninety," estimated Ogurtsov.

"Let's go. Let's go directly to your place," Molotkov said decisively. He immediately picked up the telephone and barked out, "Postpone conference. Bring the car!"

The new limousine rushed at top speed and Ogurtsov was suddenly overcome with doubts. When the car stopped sharply before a traffic light he remembered that he had expended his entire stock of scrap. How would he demonstrate the horn?

IT MUST be said here that the inventor had just recently moved to a new apartment. He was now living on the seventh floor, with a fine view of a beautiful, ideally tidy street. The garbage collector passed slowly along it every hour, collecting all the rubbish that chanced to be there. The lack of raw materials essential to his experiments drove the inventor frantic. He had to spend precious time on trips to less well-cared for districts. In specially urgent instances he had to run down to the janitor and literally plead with him for even a single pail of trash and make a solemn promise to return it. Otherwise the janitor would not give it to him. For if he did, how could he prove to his superiors that he had done his work? And this, indeed, was the reason why Ogurtsov had been compelled to spend several extra days in reconstructing the horn. Now the machine could work in reverse. When you turned the handle to the right the horn transformed scrap into valuables. When you turned it left the process was reversed.

But be that as it may, at this moment there was no scrap at hand and the janitor had gone with his wife to a concert at the conservatory of music. As he escorted Molotkov to his room Ogurtsov looked utterly crestfallen. *He won't believe me,* he was saying to himself. *He won't.*

As soon as Molotkov saw the horn he threw off his jacket and vest, rolled up his shirtsleeves and plunged his hands into the mechanism's entrails. Stepan Onufrievich stood next to him, obediently giving explanations.

"So the wave guide is grounded?" came from the belly of the horn.

"Yes, it is," answered Ogurtsov, astonished at the engineer's

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quick grasp. "Falling characteristic?" came from the horn again.

"Yes," confirmed the inventor.

At last Molotkov emerged from the machine, tidied himself, lit a cigarette and walked around the horn once again. Then he went to the window, threw out his cigarette and lit another. He was agitated. Ogurtsov stood silently, waiting for the verdict.

The engineer was at the window. A broad stream of cars rushed along the street below. The people behind the wheels hurried along on their own business, suspecting nothing. Today they were still ignorant of the marvels transpiring in that room on the seventh floor. Tomorrow everyone would know.

Molotkov turned, went over to the inventor and pressed his hand. "Congratulations, Stepan Onufrievich. You've done a great job. It's a pity we cannot see it in action now—but when we get the commission together, we'll bring as much scrap as you'll need."

And, after pressing the inventor's hand again, Molotkov rushed away down the stairs, skipping two at a time.

His working day was not yet over. He still had to attend the postponed conference and take care of a number of other matters.

IT WAS a dry, cloudless day when Ogurtsov was to demonstrate his invention. In his favorite checked shirt, smelling of triple strength eau-de-cologne, he went down into the street and walked toward the old lane. On such a day he could not omit visiting the spot where chance had aided in the birth of the great idea.

Ogurtsov entered the lane. Everything was in its appointed spot. The yellow body of the horn was still visible on the fence. The policeman, Petrov, was still at his post. Ogurtsov approached the sign and stopped before it with a solemn air, as though he were about to take an oath. There was nothing extraneous in his solemn mood; he had no vain desire to place the sign into a golden frame or to exhibit it in a public place or to build a monument in the lane. The inventor and the sign were motionless before each other, like old warriors who had seen many battles, who had paid the price of experience, but had done their work! And neither the noise of passing trucks nor the hurried steps of passersby could shatter the excited, gala mood of this meeting of two victors, who had succeeded in turning dusty everyday realities into a straight road to triumph.

Petrov, as usual, devoted his

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attention to the traffic and the movement of pedestrians. Nevertheless, the daytime visit of his old acquaintance did not escape his eye. Neither did he miss the new element in the entire bearing of the frequenter of the lane: the lightness and ease of movement, the calm confidence. Ogurtsov looked like a man who had thrown off a heavy load and stood free and light, as though ready to fly away. And when Ogurtsov approached the policeman, Petrov glanced into his gay, triumphant eyes and immediately understood that something of utmost importance had happened and that he would now be initiated into the mystery.

"Well, Sergeant, let's have a smoke, shall we?" said Ogurtsov, taking a pack of excellent cigarettes from his pocket. "I've been coming to your lane for two years but we've never had a talk before."

Petrov took a cigarette, brought it up to the cigarette lighter of an unusual shape which the visitor held out to him and listened to the whole story, from beginning to end. The inventor talked unhurriedly, pausing now and then to think over his formulations, omitting facts impossible to explain without a pencil and paper. At times his gaze misted over, as if turning to the past, and a strange smiled played on his face. At those times his thoughts flew to the most cherished triumphs of his bygone years.

"It's a good thing you've done," the sergeant told him.

Neither of them suspected that they would meet again that day and in quite another place. Ogurtsov went to visit his friend, the house manager. Petrov was summoned urgently to his precinct and told that he was being given an important and responsible assignment—to keep order during the tests of the machine invented by Ogurtsov. It was a truly fantastic coincidence!

"Oh, yes, I know," the sergeant boasted. "Continuous action, with a copper casing and a reverse lever. I know the inventor very well," he added.

"They're gems, those fellows in my precinct," his chief said to himself with satisfaction as he wrote out the assignment.

THE test site was just out of town, near a gay birch grove. The sun shone brightly down on the platform. Infrequent gusts of wind rustled among the birch leaves. As they waited for the start of the test the members of the commission strolled under the young birches, enjoying the shady coolness. Molotkov, who

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had arrived first with a group of young research assistants found a suitable clearing and started a game of badminton. His strokes were strong and precise and he hardly left the spot he stood on. His firm muscles rolled under the tanned skin whenever he swung sharply to meet the flying shuttlecock.

Ogurtsov hurried back and forth over the experiment site, giving instructions. He had to keep an eye on everything. He took great pleasure in making the arrangements and was in an excellent mood. The horn had been delivered in perfect condition. There had not been a single hitch in the smooth progression of events. And he unexpectedly met Petrov again—the man was, after all, someone he knew.

"How did you get here?" he asked the policeman.

"I've been assigned to guard you against any eventuality." Petrov was suddenly timid before him.

"Oh, well, you cannot guard against chance," Ogurtsov said jestingly. "Take, for example, the way I got the idea for the horn. I walked along the lane, looked up and there was the sign. On another day I might have paid no attention but this time—*bam!* —it came over me. Pure chance."

He went off to receive the scrap. It turned out that only one truckload had been sent.

"It's not enough." the inventor said.

"Do you really need more?" the commission member responsible for the delivery of scrap questioned doubtfully.

"It's a continuous action mechanism. No matter how much you put in, it wouldn't be enough."

"But how much do you need?" he was asked and everyone stood still to hear his answer.

"Ten truckloads," said Ogurtsov firmly, breaking into a sweat of joyous excitement. He had never had such quantities of raw materials at his disposal before.

When the tenth truck left the site, the commission assembled around the horn, and Molotkov, who had taken a swim after his game and therefore looked especially fresh, delivered a short speech.

"There have been other instances in history," he began, "when individual inventors outdistanced their epochs by a hundred, a hundred and fifty or even more years. They exemplify a remarkable characteristic, one might say, of human nature. Where the collective thought of society is impotent the local flash of the pioneer discoverer saves the day. Where the flash does not work by itself, collective thought steps in! And so it is one for all, and all for one. It is to this breed of inventors that the bold experimenter, Stepan Onufrievich

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Ogurtsov, belongs. According to our estimates the machine he has created could be expected in a hundred and sixty years or so but not any sooner. Even in the presence of the completed model it is almost impossible at the present stage of science fully to comprehend the finer points about its action. Nevertheless, the model is here and is ready to operate."

Stormy applause greeted this introduction and Molotkov stepped down from the dais. It was Ogurtsov's turn. He checked the electric contacts for the last time, shoveled scrap into the horn's narrow opening with his own hands and turned the lever to the left. The horn shuddered, growled quietly, and the gray mass of trash crept into the bowels of the mechanism, as though of its own will.

FOR a few moments nothing came from the other end of the horn. The mysterious process of transformation went on within it. Suddenly it whistled, sighed, and various objects began to tumble out of it directly onto the ground. It was difficult to tell what they were, for no sooner did an object appear than it was covered by the next one. The pyramid of finished goods grew as the assembled group watched. "Woolen socks," someone managed to notice. "And here's a samovar," came from the center of the group. But these were isolated voices. The great majority of the commission stood dumbfounded.

And the products still poured and poured from the horn, astonishing everyone with their variety. At one point a teen-ager's bicycle rolled up to the pyramid. The horn's construction was not yet ideal and the inventor himself would have been hard put to say exactly what was to be expected.

Ogurtsov also was quite overcome. And who, indeed, could help being affected by the wonders taking place on the platform? Deep silence prevailed even after the last bits of wood from the huge pile of rubbish delivered to the grounds by the ten trucks had rushed through the copper oval, transformed into a long garland of pins. It was like the silence in a concert hall after the great conductor waved his baton for the final time.

And suddenly there was motion. People excitedly embraced one another and the inventor.

"Swing him, swing him!" everyone cried and Ogurtsov flew up into the air for the first time in his life.

Only one man preserved utter calm in the midst of this pandemonium. Dressed in a large, wide coat, he stood still, pondering something with great concentration. His face reflected the intensity of his thought.

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"It needs verification, of course. A good deal of verification," his lips whispered. He was known among his colleagues for his extreme scrupulousness and assiduity. And also for the fact that even the most extraordinary events could not ruffle his absolute calm. It was said that he had once witnessed a severe earthquake. Buildings had crashed all around him and a yawning abyss had opened up only a yard away but he had merely commented, "How impressive are the forces of natural phenomena. When I come home I'll have to tell the family about this."

His name was Parovozov, and his opinion was held in great esteem by many people.

As soon as the first outburst of rejoicing subsided, Paravozov stepped forward and asked, "Does the device contain a register to keep tally of the products manufactured?"

"No, I haven't invented that." Stepan Onufrievich spread his arms guiltily. "There hasn't been enough time."

"Complete it, complete it, by all means, my dear man," Parovozov admonished amiably. "And now, the second point. This machine can evidently prove valuable to the economy. But to approve it the commission must first check every aspect of its operation. Here, for instance," he waved a slip of paper, "it is written that the construction has a reverse movement—in other words, that it can process the objects produced back to their original state. Can we see it with our own eyes?"

"That's the easiest thing," Ogurtsov smiled. "But what for?"

"Everything must be done properly," Parovozov declared.

"Well, in that case—"

Ogurtsov turned the lever to the right.

The other members of the commission, still excited over everything they had seen, did not pay too much attention to the little interchange. "All right, what's the difference. Let's see." The victory was obvious in any case.

And the mountain of things began to melt away. Objects flew into the mouth of the horn, clanking, in larger and larger quantities. The opening was much wider here and could receive far more than the narrow end. Many objects rose into the air and floated around the horn, colliding with each other in response to the powerful force drawing them in. Clouds of dust rose over the area. Small twisters danced around, occasionally combining into a large, powerful one. And when a straw hat was snatched from the head of one of the observers and carried up into the clouds the entire commission, as one man, dropped to the ground. Only the unbending Parovozov remained standing. He caught at the brim

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of his hat and was just about to make a pronouncement about the mighty forces of nature when a strong current of air raised him up and carried him irresistibly toward the roaring throat of the horn. His body whirled lightly in mid-air, pushed aside several smaller objects, and smoothly entered the machine with the general stream. Parovozov had not even had time to remove his hand from his hat.

No one saw this except Ogurtsov. Everyone else was lying pressed to the ground, trying to shield their heads with their hands. The inventor desperately tried to pull the lever back to zero position, but it was stuck. He bore down on the damned lever with his whole puny weight, but it would not budge. "What a scandal! What a scandal!" he whispered past trembling lips and beads of sweat rolled off his forehead.

Ogurtsov looked around: Parovozov was already half swallowed by the horn.

"Dig in with your hands, dig in, you damned fool!" he shouted in a voice he did not recognize as his own. Then he abandoned the lever and threw himself where only Parovozov's legs were visible among the whirling armchairs, washstands, and bolts of fabric. He gripped those legs with all his strength and both were enveloped in a cloud of dust.

Seeing that the situation was critical, the policeman Petrov covered half the distance between himself and the horn with one mighty leap and then crawled on his belly across the dangerous zone. But suddenly the horn grunted, boomed like a copper bell and stopped by itself.

AFTER a while the people recovered and gathered around the machine. There is no need to describe their dismay over the calamity. Besides, without Ogurtsov no one knew, properly speaking, how to approach the horn. They tried to turn the lever to the left. It turned easily enough but that was all. Only a trickle of molten metal poured out of the horn and congealed. Yes it was quite a situation.

For days engineers and mechanics struggled to reanimate the horn. Their efforts proved almost totally without results. All they managed was to restore the reverse action to some extent, so that the horn could process useful objects into scrap. Molotkov grew pale and lost weight. He did not leave the horn for a moment all those days. Someone began to revile Parovozov but Molotkov cut him off sharply.

"It's our own fault! The Parovozovs should not be allowed within a mile of new developments. And we—"

Someone else blamed Ogurtsov

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himself for leaving no clear instructions while there was still time.

"Try and explain it," Molotkov countered wearily. "It's centuries ahead. As mysterious as human computers. They'll juggle millions in their minds—but how? Try to understand."

The policeman Petrov suffered from the grievous loss along with everyone. Besides, it seemed to him that he alone was responsible for everything. And he could not bear to meet the eyes of the commission members. How could he have permitted this outrage to occur? Such an idiotic request—to make the machine work backward! Parovozov now seemed to him one of those vicious hooligans who sauntered around idly in narrow trousers. And he almost convinced himself that he had once taken Parovozov to the precinct for disorderly conduct while in a state of intoxication. But he had taken pity on him and let him go without reporting to his place of employment.

In reality, of course, no such incident had ever taken place. Parovozov had lived a most exemplary life and no one could have brought any complaints against him.

As for the horn, it was turned over to a group of scientists for restoration. However, in the course of the catastrophe it had been reduced to such a condition that to "restore" it meant to invent it anew. For the time being, alas, there is little hope of success. After all, not everyone is capable of making an invention that only our remote descendants will be equal to.

VLADIMIR GRIGORIEV, born in 1935, is a Russian engineer. A participant in several scientific expeditions, including one to study the Tungus meteorite, he began to publish SF in 1962, and has since published many stories and one collection (1967). *Horn of Plenty* will be included in a collection of recent Soviet science fiction, edited and translated by Mirra Ginsburg, to be published by Holt, Rinehart & Winston.

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(continued from page 121)

so than this one. What can be seen here, in fleeting glimpses, are the parts of a "real" Asimov . . . the different sorts of mood and memory which, stored up in a brain that never forgets, operate to condition the words that appear on the paper in the magic Asimov typewriter. And he comes off well, this Asimov does, compared to your standard of comparison.

Having found this, however, the buyer will find little else that falls into a coherent pattern except with reference to the Asimov personality. About all that can be said for this uneven book, as distinguished from other recent uneven Asimov collections, is that it does serve as a catalogue. Coming upon a particularly attractive selection, such as one of his biographical sketches of scientists, the reader can go out and get a copy of Doubleday's *Asimov's Biographical Encyclopedia of Science and Technology*, for instance, and really dig in.

This is not a negligible virtue in *Opus 100*. Considered as entertainment, however, the book as a whole demands so many shifts of personality and attitude in the reader that no one, not even Asimov, could keep up with them comfortably. Asimov himself, after all, only did it in half a lifetime. If *Opus 100* were a book to put down and pick up at intervals, as some other collection might be, this would not be a crucial fault. But one can't do that in this case, or else one loses the thread of the narrative about Ike's life and thought.

What we have, in fact, is a stunt. A book put together to serve the needs of a luncheon turn of phrase and—Is it cruel to say this?—the same sort of complaisance with number magic that Asimov several times decries in *Opus 100*.

Ike should not have so many luncheons with editors who fall under his spell. A more objective editorial board would not have passed a book like *Asimov's Mysteries*, for instance, with its one or two good stories and its tens of thousands of words of filler. A really good editor in a position to keep Ike from dancing away—Is there still such a man and do the economics still permit it?—would force him away from the kind of ideas that come facile to the educated mind and nearer to the stuff that lives in the heart.

As it is, this shouldn't be *Opus 100*. It should be, maybe, *Opus 75*, and the 75 should be what the world calls fiction and what the writer knows is truth because mind has been bent to the aid of heart, as distinguished from its concealment. ●

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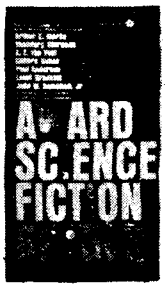

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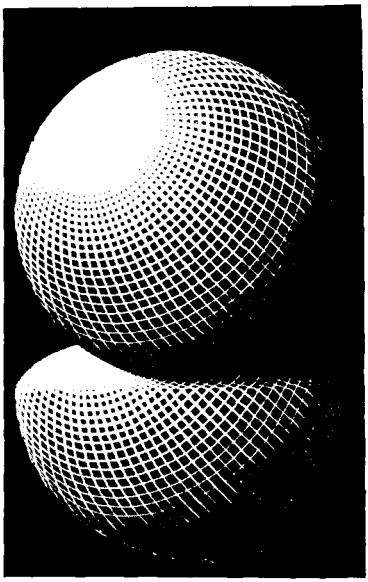

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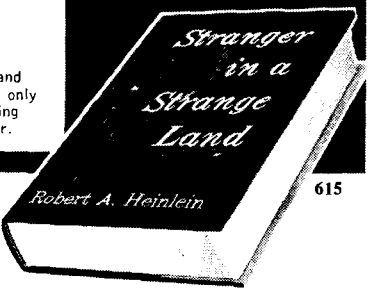

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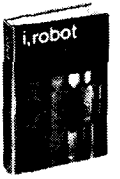

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